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GENERAL PROGNOSIS OF SYPHILIS IN THE LIGHT OF RECENT PROGRESS

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The additions to our knowledge of syphilis during the last two decades are: (1) the discovery of the spirochete; (2) the Wassermann test, and (3) the new organic arsenic compounds. To these achievements of primary importance may be added the use of the dark-field microscope and the employment of spinal puncture for diagnostic and therapeutic purposes.

DISCOVERY OF THE SPIROCHETE

The discovery of the spirochete is one of those fundamental additions to our knowledge, the ultimate effect of which it is impossible to gage. The whole field of experimental syphilis has been placed on a scientific basis, and progress is as inevitable as it was in other fields after the discovery of the germs of diphtheria, tetanus, etc. A vista of unlimited possibilities has been opened.

In the meantime this discovery has added a factor that has enormously improved the general prognosis of syphilis. It may be stated that there is no factor in the prognosis of syphilis that is comparable in importance with early and energetic treatment. The syphilis that has been generalized in the system, that has infected every organ and tissue, that, in the course of years, has induced sclerotic changes in important structures, presents an entirely different prospect of cure from the disease in its incipience. The treatment of syphilis by the vigorous exhibition of arsphenamin in its primary stage, while the disease is still largely a local infection and before the organisms have acted long enough on the tissues even to provoke the development of a positive Wassermann reaction, results in the immediate cure of the disease in practically every case. It is in its primary stage that the prognosis of a properly treated case of syphilis is at its very best. On this point there is universal agreement among syphilographers.

Twenty years ago this golden opportunity for the cure of the disease, even if we had then possessed the potent remedies now at our command, would have been allowed to pass. Twenty years ago it was the accepted practice to await the development of secondary lesions before instituting treatment. This practice was entirely justified in the existing state of knowledge. It was, as it is today, an admitted fact that the diagnosis of syphilis based on the clinical aspects of the initial lesion cannot be made with absolute certainty. On the one hand, the supposed chancre might not be syphilitic and the patient therefore was subjected unnecessarily to the anguish and the hardship of a prolonged course of treatment; or, on the other hand, the institution of treatment in the primary stage, by suppressing the secondary manifestations, would in the majority of cases result in a doubt of the diagnosis on the part of the patient with consequent neglect to pursue the treatment to its end.

It is today a common experience for syphilologists to hear from a tabetic or an old cardiac syphilitic the story of a slight sore, its cauterization by the physician, the taking of some pills for a few weeks, and then nothing more in the way of treatment or of symptoms till the grave and possibly hopeless lesions of the late syphilitic made themselves manifest. It was, therefore, correct practice twenty years ago to await the development of secondary lesions, not only for the purpose of establishing the diagnosis on a firm basis, but also to convince the patient of the correctness of the diagnosis and thereby insure a greater fidelity to treatment. Waiting until the appearance of secondary lesions, however, meant waiting until there was a wide invasion of the system, waiting until a profound spirochetal septicemia was established. In the case of any other local infection, no one would think of postponing for a single moment the steps necessary to prevent systemic infection. Today, through our knowledge of the spirochete, with the aid of the dark-field microscope, we are able in a few minutes to make a positive diagnosis of syphilis in every case of untreated chancre and to take the necessary measures to cut short the further systemic infection.

The prognosis of syphilis has been immeasurably improved, in this respect alone, by the discovery of the spirochete.

At the other end of the scale of syphilitic lesions, Noguchi's discovery of the spirochete in the tissues of the central nervous system has definitely placed tabes and paresis—the affections formerly spoken of as parasyphilitic—in the group of syphilitic affections, bringing to an end the fifty years' controversy as to their nature. The new studies of the spinal fluid have brought out the fact that the foundation for these late lesions of the central nervous system is laid in the early stage of the disease, probably at the time of the first great generalization of the spirochetes; more than half the cases of syphilis show evidence of disturbance in the spinal fluid at this early period. On the other hand, it is a common observation that cases of tabes and paresis give a history of little or no treatment in the early days of their disease, and though there are exceptional cases that seem to have been well treated by the former methods, early neglect is the rule. The time to cure paresis and tabes is the time at which the

central nervous system is first invaded and before the anatomic lesions that follow many years later have developed. I venture to predict that with the diffusion of the knowledge of the supreme importance of early energetic treatment by the new remedies, the incidence of these terrible and generally hopeless effects of syphilis will greatly diminish, and the general prognosis of syphilis be proportionately improved.

THE WASSERMANN TEST

The second great achievement of recent years is the application of the Bordet-Gengou method of complement fixation to syphilis—the Wassermann test.

In all the fluctuations of opinion as to the significance and value of this test one fact has remained clear, namely, that a strongly positive Wassermann reaction is found practically only in syphilis, and that a strongly positive Wassermann reaction means syphilis.[1] This test has aided in the proof of the syphilitic nature of the late lesions of the central nervous system, of the sclerotic changes of the cardiac valves and of aortic aneurysm; it has abolished Colles' and Profeta's laws by showing that in these cases both mother and child are protected against infection because they are already syphilitic. It has awakened the profession and the public to the unsuspected extent of the prevalence of syphilis in every community in which a systematic investigation has been made, and by increasing our knowledge of the extent and gravity of the disease has served as the great stimulus to the administration of proper treatment and to this extent has benefited the prognosis of the disease in the individual. Never in the history of syphilis has there been so extensive a knowledge of its nature and so general an effort to curb its spread by education and other prophylactic measures along the lines of "social hygiene."

Furthermore, the Wassermann reaction is used as an index of the efficacy of treatment and thus as a prognostic sign. On the theory that the Wassermann reaction is due to the presence of certain bodies in the blood that are produced as the effect of an interaction of the spirochetes and the tissues, it is an obvious deduction that the disappearance of the Wassermann bodies from the blood indicates the disappearance of the spirochetes. Unfortunately, this deduction goes too far; the disappearance of the Wassermann bodies from the blood of the syphilitic, the occurrence of a negative Wassermann reaction, indicates only the cessation of the interaction of tissues and spirochetes and not necessarily the eradication of the spirochetes. It seems that a negative Wassermann reaction in a syphilitic means only that there are no foci of spirochetes in the patient sufficiently active to bring about the formation of an appreciable quantity of Wassermann bodies in the blood; but it affords no proof of the eradication of the spirochetes. We know that the late syphilitic with a gumma in the skin, or with obvious symptoms of syphilis of the central nervous system, frequently presents a negative Wassermann reaction. We know, furthermore, that vigorous treatment in the secondary or the later stages commonly results in a negative Wassermann reaction which subsequently may become positive. As an index of the complete spirochetal disinfection of the patient, a negative Wassermann test at a given moment is relatively useless. On the contrary, however, as an index of failure to eradicate the spirochetes, a positive Wassermann reaction in the syphilitic under treatment has the greatest value and demands the continuance of treatment.

This brings us to the question of the significance of a positive Wassermann reaction in the old asymptomatic syphilitic. I have in mind two classes of cases:

First, the syphilitic who has been well treated for several years, whose spinal fluid is negative, who presents no physical evidence of his disease, but whose blood serum persistently shows a strongly positive Wassermann reaction, which energetic courses of treatment have been able at most to render temporarily a little less strongly positive. I have seen so many of these resistant Wassermann-positives become Wassermann-negative as the result of further treatment, that in my opinion systematic treatment should be continued for at least three years before we can think of relegating the patient to the class of the permanently Wassermann-positive. It is possible that such a patient harbors spirochetes in his viscera and that occasional short courses of treatment maintained for a number of years will serve to prevent the manifestation of any syphilitic lesions; but further energetic treatment of the kind that is demanded in the first years of his infection seems to me no longer required.

Second, a class of elderly patients in whom, as the result of a thorough clinical examination, a strongly positive Wassermann reaction is discovered, as it were, by accident. These patients present no clinical evidence of syphilis whatever; they give no history of infection, or they may perhaps recall a genital sore of thirty years before, and perhaps present a genital scar, for which they never received treatment and from which they never observed any effects. What is the proper line of conduct to pursue with these old untreated asymptomatic Wassermann-positives? The question, in my opinion, resolves itself into a judicious weighing of possibilities and balancing of evils. The man who has carried his spirochetes for thirty or forty years without even being aware of his condition may well be allowed to carry them undisturbed for the rest of his days. When we consider the prognosis of his case, we must admit the possibility that he will die of cerebral hemorrhage as the effect of syphilitic changes in his arteries at the age of 60 or 65 instead of going on to the full span of life. But we cannot be sure even of that; and against this simple possibility we must weigh the great distress which a prolonged course of antisyphilitic treatment necessarily involves and, in the end, the grave doubt as to the ability of such treatment to eradicate the spirochetes. The asymptomatic Wassermann-positive who is well past his fiftieth year, as a rule, should be let alone.

With regard to this class of case as well as with the somewhat younger syphilitic who remains Wassermann-positive in spite of the most energetic treatment, yet presenting no evidence of visceral syphilis, the question arises whether we may not be dealing with a condition analogous to that of the healthy carriers of meningitis, diphtheria or typhoid bacilli; whether there is not a class of spirochete carriers who, while harboring the germs, are themselves immune to their effects. There is a growing conviction among syphilologists that there is indeed a class of harmless spirochete carriers, harmless to themselves, because the spirochetes are merely saprophytes in their host and harmless to others, because, unlike the carriers of meningitis, diphtheria and typhoid, their germs have no way of leaving their host to infect others. However, we must not too lightly

1. In yaws the Wassermann reaction is always positive, in nodular leprosy generally; but with these diseases a question of differential diagnosis from syphilis is not likely to occur, at least in this country.

assume that a given case, asymptomatic and Wassermann-positive, belongs to this class till we have really subjected the patient to adequate treatment and by examination of the spinal fluid excluded the possibility of a still latent syphilis of the central nervous system.

As an aid in the diagnosis of syphilis and as a means of showing the necessity for further treatment in our cases, the Wassermann reaction has enormously enhanced the general prognosis of syphilis.

THE ORGANIC ARSENIC COMPOUNDS

We come now to the third achievement: the employment of the organic arsenic compounds to which the name of arsphenamin has been officially assigned. The extravagant hopes that were entertained ten years ago when this remedy was first announced have not been realized, and in the disappointment of our expectation that a single injection of arsphenamin would permanently sterilize the patient infected with spirochetes, the pendulum has swung too far and we have lost sight of the fact that a complete spirochetal sterilization is, indeed, a frequent achievement. While, in the great majority of cases, prolonged treatment is necessary, every syphilologist can point to some cases in which the disease, attacked in its initial stage, has been eradicated by a single injection or a single short course of injections. The proof of cure in these cases rests on the permanence of the negative Wassermann reaction, on the freedom from symptoms extending already up to nearly ten years, and finally on the frequent occurrence of reinfection with syphilis in these cases. When we consider the enormous chronicity of syphilis, the fact that lesions may occur after an interval of freedom from symptoms lasting for thirty or forty years, it is evident that freedom from symptoms alone cannot be considered a proof of cure. The provocative arsphenamin injection is a futile and often misleading procedure.[2] The only positive proof of cure is a fresh infection. As long as the patient is syphilitic he cannot acquire syphilis; he is immune to a fresh infection with spirochetes. Conversely, the occurrence of a fresh infection is a proof that he was free from syphilis. In the old days, reinfections of syphilis were such rare events that many syphilographers questioned the possibility of their occurrence, and sought to explain the symptoms as relapses in a syphilitic; but the best authorities, including Fournier, finally recognized reinfection as a possible, though rare, accident. Since the introduction of the new remedies, reinfections with syphilis have become a relatively frequent event. Such a case occurred in my own practice only a few days ago:

> The patient had acquired a cephalic chancre in 1902. He was treated by pills, which he continued taking intermittently until I saw him in 1914. At that time he presented several patches of a scaling serpiginous syphilid on the neck and scalp, and a positive Wassermann reaction. A course of arsphenamin and mercury by injection rapidly removed his lesions and brought about a negative Wassermann reaction. During the year he received three more courses of treatment, the Wassermann reaction remaining negative. During the next two years he was under observation without treatment, and his blood, examined at intervals, was negative. He was discharged in April, 1917. I saw him again, January 17 of this year. He had been venereally exposed about December 12, and four weeks later noticed a sore on the prepuce. Five days later when I saw him he presented a lesion which no syphilologist would have hesitated to pronounce a syphilitic chancre. Shape, border, floor and induration were characteristic, and on dark-field examination spirochetes were found abundantly present. The Wassermann reaction was negative.

Such occurrences must in the nature of the case be extremely rare. By the time a man has been cured of his syphilis, he has grown older and usually wiser. He is less likely to expose himself quite so carelessly as before; he has had a severe lesson which has sobered him; perhaps he has married. The cured syphilitic, in short, is not so good a target for infection as he was before. But where in the old days we had one case of reinfection we now have a hundred. Every one of these cases, of course properly authenticated, is an absolute proof of the efficacy of treatment, and their greatly increased number in recent times is a proof of the superiority of our present methods over the past. The prognosis of syphilis has been incalculably enhanced by the new remedies.

With this statement of a strong conviction we must be content. It is impossible to give figures of comparison. We know that the majority of syphilitics were symptomatically cured by the use of mercury alone. But we see our hospitals and asylums still filled with the victims of syphilis uncured by this treatment.

BENEFITS OF IMPROVED PROGNOSIS

The recent additions to our knowledge have made it possible to attack the disease by prophylaxis at the moment of infection; to make an infallible diagnosis before the system is swarming with spirochetes; to recognize the necessity for further treatment even in the absence of symptoms; to detect the disease in the central nervous system before clinical symptoms are manifest, and, finally, in arsphenamin, have given us a remedy incomparably superior to mercury in speed of action as well as in efficacy.

It is inconceivable that the next generation will not reap the benefit of the improved prognosis of syphilis.

1 West Seventieth Street.

2. Pollitzer, Sigmund, and Spiegel, L.: The "Provocative" Wassermann Test, Am. J. Syph. 3: 252 (April) 1919.

THE RÔLE OF CARBOHYDRATES IN THE TREATMENT OF TOXEMIAS OF EARLY PREGNANCY*

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Nausea with occasional vomiting early in pregnancy is undoubtedly a manifestation of mild toxemia, but the condition is so familiar to every one that it attracts little attention. Patients often demand medical care because they are seriously annoyed by their "morning sickness," without arousing much concern on the part of the physician. On the other hand, many patients, because they think that this condition is to be expected during pregnancy, fail to seek advice until vomiting has progressed to the point at which it may be classed as "pernicious" or "intractable."

Despite the fact that fairly severe toxemia is not at all uncommon, and that mild toxemia is met con-

* Read before the New York Obstetrical Society, Jan. 13, 1920.
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stantly, there are many problems presented in this connection that are still without adequate explanation. There are, for instance, the questions of when to interfere and when not to interfere; which is to be a mild case of vomiting that may be expected to cease spontaneously, and which is to become a case of uncontrollable vomiting with inanition, acidosis, dehydration and death; and, in fact, why women should suffer at all during pregnancy from even mild nausea. Undoubtedly there is a relationship between the milder and the graver types of toxemia of early pregnancy, and there is a problematic relationship between these toxemias and those of later pregnancy which we know as acute yellow atrophy of the liver, preeclamptic toxemia, and eclampsia.

It seemed reasonable, on this account, to hope that a study of the milder types of toxemia might disclose important facts regarding the origin of the more serious toxemias. Despite the tremendous amount of work that has already been done along these lines, we felt impelled to begin this study in order to explain, if possible, the success of a purely empiric line of treatment which has given unusually good results in our clinic.

A series of seventy-six cases of toxemia of early pregnancy was treated along certain definite lines. That is to say, our method of approaching this condition underwent a gradual process of development during a period of about five years, one point suggesting another, until the time came when all our patients were subjected to a consistent, well-outlined course of treatment which varied only in being more or less rigid according to the severity of the woman's illness. Further attention to certain details made it possible to apply the same general principles that had been developed to more profoundly toxic conditions, not only during early pregnancy but also late in pregnancy, still obtaining beneficial results with progressively fewer failures.

THEORIES REGARDING ETIOLOGY OF TOXEMIA OF EARLY PREGNANCY

A review of the extensive literature on this subject, with the ingenious theories that have been advanced to explain all toxemia of pregnancy, is the best possible demonstration of the fact that no single idea is sufficiently comprehensive to cover this unquestionably complex matter.

Certain unknown toxic substances are supposed to be elaborated somewhere in the metabolism of a pregnant woman. The presence of these substances in the body is considered to be the cause of the vomiting and of the pathologic changes that result if the diseased condition is prolonged. There are four main theories as to the source of these toxic substances. The first is that they are of gastro-intestinal origin and akin to an ordinary autointoxination; the second, that they occur as the result of disturbances in the various glands of internal secretion; the third, that they are of fetal origin; and the fourth, that they result from disturbance in liver function. Dirmoser [1] was the first to assert that these toxins were the result of intestinal putrefaction, and it is still agreed that autointoxication may be an exciting cause of pernicious vomiting of pregnancy. The thyroid, the parathyroids, the suprarenal glands and the ovaries have all been credited with responsibility without actual confirmatory evidence, while the fetus itself, because of its demands on the mother and because it casts off foreign protein into the maternal blood stream, has been plausibly blamed. So far as the fourth theory is concerned, it is manifest that liver function is disturbed, but the theory offers no explanation of the manner in which this occurs. Disturbance in liver function might as readily be an effect as a cause of toxemia.

Considerable work has been done by Williams,[2] Stone[3] and Ewing[4] on the pathologic changes in the liver and their significance, and the work of these authorities on maternal metabolism is familiar to every one. This is especially true of that done by Williams,[5] who still classifies vomiting of pregnancy as reflex, neurotic and toxemic. Reflex and neurotic types fall into one of two main groups, while toxemic vomiting constitutes the other, and Williams distinguishes between the two by changes in the relation of the ammonia nitrogen to the total nitrogen of the urine, this being termed the ammonia coefficient. It is hardly necessary to consider in detail the questions which Williams' views have brought up, because their importance aroused marked interest, and at the same time no little controversy. No classification should be too sharply defined, and it is probable that all neurotic vomiting of pregnancy has an underlying element of toxemia. On the other hand, toxemic vomiting of pregnancy is usually accompanied, in its beginning at least, by a certain degree of neurosis. In many cases, particularly if seen in the early stages, it remains to be determined, therefore, whether it is the neurosis or the toxemia which predominates in the combination. Symptomatically the two groups are alike, because even a simple starvation is accompanied by acidosis, inanition, and another most important factor, dehydration.

While it is true that no one of these various theories is sufficient to account for the origin of the toxemia of pregnancy which is manifested by nausea and vomiting, nevertheless they offer many clues which must be of value at some time in solving this preplexing problem. We have merely endeavored to follow some of these clues.

DEVELOPMENT OF TREATMENT FROM A DIETETIC STANDPOINT

It has been recommended for some time, especially by Dr. Whitridge Williams, that women suffering from nausea, or the so-called "morning sickness," be directed to eat some simple thing, such as one or two soda crackers and a glass of water, before arising in the morning. Williams suggests that the mental effect of this simple course is important; but benefit follows so often and an elaboration of this procedure gives such significant results that it must be physical rather than psychic in its action.

The first nausea of pregnancy usually affects the patient early each day, soon after she arises. This is after the longest period of fasting in the twenty-four hours. An over-night fast can produce only moderate hunger but any hunger may be considered mild starvation. If eating before making any exertion relieves this morning nausea, it is obvious that there is a relation between starvation and the occurrence of the nausea.

Having relieved some patients of "morning sickness" by directing them to eat either the crackers and

1. Dirmoser: Wien. klin. Wchnschr. **16**: 405, 1903.

2. Williams: Bull. Johns Hopkins Hosp. **17**: 71, 1906.
3. Stone: Med. Rec. **48**: 295, 1905.
4. Ewing: Am. J. Obst. **51**: 145, 1905.
5. Williams: Obstetrics, 1917, p. 551.

water or their regular breakfast in bed, it was a natural step to suggest to those patients who had nausea throughout the entire day, either with or without vomiting, that they eat regularly between meals as well as at the usual mealtimes. It is necessary to specify what and when the patient shall eat, because it is by the use of carbohydrates that the best results are obtained. Excessive amounts of proteins are not demanded or well tolerated, and, indeed, the higher the protein intake the more rapidly does the toxemia progress from bad to worse. This is probably due to the greater nitrogen elimination made necessary by protein metabolism and intestinal putrefaction, and also because of the proportionately lessened carbohydrate intake.

GENERAL OUTLINE FOR DIET HIGH IN CARBOHYDRATES

Article of Diet and Amount	Percentage of Protein	Fat	Carbohydrates	Calories
7:30 a. m.				
2 soda crackers	1.4	1.2	10.2	55
Breakfast, 8 a. m.				
Stewed prunes (6 large)	1.4	...	47.0	200
or 1 baked apple	0.4	0.5	14.0	64
3½ oz. oat-meal	3 8	1.4	17.8	101
or 3½ oz. cream of wheat	3 0	0.2	19.1	93
with ½ oz. sugar and 1 oz. cream	0 8	5.7	16.4	122
Cup chocolate with sugar	4.1	7.5	22.0	325
2 slices toast	5.8	...	32.0	140
1 oz. honey	...	...	25.0	101
10:30 a. m.				
2 slices toast	5.8	...	32.0	140
or 2 crackers	1.4	1.2	10.2	56
1 glass milk	6.2	7.0	9.4	128
Lunch, 12:30 p. m.				
Cream of celery soup	1.8	2.5	4.5	50
or potato soup	8.7	7.1	30.7	225
4 crackers	5.6	4.8	40.8	144
2 slices bread and butter	5 8	...	32.0	140
Lettuce, ½ head	1.2	0.3	2.9	20
1 cup custard	5.1	7.7	32.0	100
or 1 cup cornstarch pudding or 1 cup apple tapioca	0.2	0.07	23.0	100
or 1 cup ice cream	4.9	6.4	23.4	172
or 3 oz. gelatin with cream and sugar	5.0	5.7	29.0	187
"Tea," 4 p. m.				
Tea with sugar	...	...	10.0	40
2 slices toast	5.8	...	32.0	140
1 slice sponge cake	6.3	10.7	66.0	384
Dinner, 6:30 p. m.				
1 cup cream of pea soup	3.6	0.7	7.6	50
or other soups as at lunch				
2 crackers	1.4	1.2	10.2	56
2 slices toast	5.8	...	32.0	140
Baked potato, sweet or white (large)	1.7	...	16.0	100
or 3 oz. rice	1.7	0.1	20.5	92
3 oz. stewed carrots	0.9	0.3	7.5	50
or 3 oz. beets	1.9	0.1	6.1	33
Desserts as at lunch				
or 1 oz. dates	0.7	0.9	26.0	116
or 1 oz. raisins	0.8	1.0	24.0	100
Supper, 9:30 to 10 p. m.				
2 slices bread	5.8	...	32.0	142
or 2 soda crackers	1.4	1.2	10.2	57
1 glass milk	6.2	7.0	9.4	128

This point may be questioned by those who agree with Lynch.[6] He emphasizes in a recent publication the importance of diet in toxemia, but urges absolute restriction of sweets and fruits, giving a diet of proteins and a limited amount of fats in what he calls the hyperacidity group of cases. Hyperacidity or subacidity will have little influence if gastric lavage is employed with any regularity, and the improvement in Lynch's cases was probably due more to the fact that he administered large amounts of glucose and soda by rectum, than to the dry solid diet which he considered essential. It is common knowledge that excessive meat eating is inadvisable during pregnancy, and absolutely to be interdicted in such a toxemia as a preeclamptic state.

6. Lynch, F. W.: Treatment of the Severe Vomitings of Early Pregnancy, J. A. M. A. **73**: 488 (Aug. 16) 1919.

The usual outline for the day was a soda cracker breakfast before rising, a light breakfast at the regular time, unsalted soda crackers and milk in the middle of the morning, and a light lunch without meat or pastry at lunch time, the dessert being cornstarch or rice pudding or custard. Afternoon tea with arrowroot biscuits or bread and butter sandwiches was followed at the usual time by a light dinner or supper similar to the luncheon, with some sweets and possibly raisins or dates for dessert. A bowl of bread and milk at bedtime, and some crackers and water on the bedstand for use during the night, complete the twenty-four hour schedule. This was usually sufficient to relieve an ordinarily mild case of nausea and vomiting, if due attention was also paid to elimination by the bowels. It will be noticed that this is not a strictly protein-free diet, but rather, a diet high in carbohydrates.

The accompanying table is presented for the purpose of demonstrating the preponderance of carbohydrates in the diet which has been suggested for these patients. It is scarcely necessary to point out that this is merely a general outline, and that considerable variety is possible if this outline is used as a working basis in the arrangement of menus. It is by no means essential that proteins and fats should be entirely eliminated. Glucose and soda solution supplements the carbohydrate intake to the extent of about 10 gm. of glucose if the patient is given, as is directed below, 1,000 c.c. of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution per day.

More aggravated cases of vomiting may result in spite of this dietetic treatment by direct progression from the one condition to the other, or because the patient fails to carry out these directions. Women whose vomiting is becoming progressively worse require more detailed care and observation. At first all food should be withdrawn for a period of from twenty-four to thirty-six hours in order to give the stomach a complete rest. Gastric lavage should be carried out two or three times daily to remove food residue, bile and mucus, because these patients all present a certain amount of reverse peristalsis. Furthermore, such cathartics as magnesium sulphate are necessary in order to reestablish peristaltic movements downward, and to open the bowels. This may be passed in through the tube, and is usually retained if the stomach has been washed out before its introduction. Enteroclysis of glucose and soda solution, as well as the usual rest in bed is required, and the employment of sedatives in the form of bromids and chloral is customary when indicated.

After the initial period of rest, during which the vomiting usually subsides, the stomach requires reeducation in precisely the same way that it does in any person who has been slowly starving for days or weeks. Either stomach is intolerant of food and would reject any great amount put into it. Consequently small amounts of nourishment are given at frequent intervals after the period of rest seems to have accomplished its purpose. An ounce to an ounce and a half of whey, peptonized milk, skimmed milk and vichy, or buttermilk are given alternately with two ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution every two hours. By mouth or by rectum an effort is made to give the patient at least one quart of the latter solution daily; but if her condition is at all urgent, plain glucose is

given by intravenous injection, and repeated as often as indicated. Wilder and Sansum [7] have demonstrated that as much as 0.8 gm. of glucose may be given intravenously per hour per kilogram of body weight without causing a glycosuria. They have given a large number of such injections, as have Erlanger and Woodyatt [8] in their work on the intravenous injection of glucose in shock. Litchfield [9] has used intravenous injections of glucose in pneumonia, and we have employed it extensively in our work on toxemia, including eclampsia, as well as in normal pregnant women in connection with some research work to which we shall refer presently. In none of the work of the authorities referred to nor in our clinic have there been serious reactions, and with proper technic no reaction should follow. One of the chief precautions necessary is to give the injection slowly. We usually allow one-half hour to inject from 15 to 20 gm. of glucose in 250 c.c. of water. It is also absolutely essential that glucose for intravenous injection should not be a commercial product, but chemically pure, and the solution should be sterilized in an autoclave.

If patients find glucose hard to tolerate, and glycosuria appears, we do not feel that this should influence the treatment more than to indicate a need for a reduction in the amount given, and the intravenous injections may be repeated as often as necessary, while the ingestion by mouth may be continued in lessened quantity. Litchfield has referred to the importance of dehydration in all toxic or starved persons, and this cannot be too strongly emphasized. Water is urgently demanded, and should be given frequently in small amounts during the initial period of rest referred to above. If it is rejected from the stomach, it must be given by enteroclysis or by intravenous injection. In the latter case it is usually given by being used as the solvent for the glucose which we consider necessary.

Ordinarily, by the third or fourth day these patients may have such soups as cream of celery or purée of potatoes added to their diet, with stewed fruits, cornstarch pudding, or ice cream, still continuing the glucose and soda by mouth and by bowel. Crackers, milktoast, cream of wheat and various other gruels, custards and sugar are added next, the important feature of the entire course of treatment being a strict adherence to the regimen laid down, and a careful observation of details. An early return to a substantial diet high in carbohydrates is soon accomplished in most cases.

This lengthy explanation of the dietary procedure that has given the best results in our work has been made solely to point out the reasons for believing that a deficiency in carbohydrate intake is an important factor in the etiology of toxemia of pregnancy. So many of the facts that we have outlined, and so many of the suggestions for treatment which we have made, are known in a general way that it might seem as though nothing new had been offered. This is largely true; but the fact remains that these points, many of them thoroughly familiar to the profession, have not been correlated and put into practice in anything more than a haphazard way, and then are used empirically. Glucose and its usual concomitant soda are ordinarily employed on the ground that there is an acidosis present. It must be remembered, however, that acidosis is a symptom and not a distinct entity in itself, and that it is difficult to be contented with the mere treating of symptoms.

7. Wilder, R. M., and Sansum, W. D.: d-Glucose Tolerance in Health and Disease, Arch. Int. Med. **19**: 311 (Feb.) 1917.
8. Erlanger, Joseph, and Woodyatt, R. T.: Intravenous Glucose Injections in Shock, J. A. M. A. **69**: 1410 (Oct. 27) 1917.
9. Litchfield, Lawrence: Glucose Intravenously as a Therapeutic Measure, J. A. M. A. **71**: 503 (Aug. 17) 1918.

APPLICATION OF THE CARBOHYDRATE DEFICIENCY THEORY

Observing that the free use of carbohydrates in various forms was followed by a large measure of success in toxemia, it was only natural to seek an explanation of this. It was felt that any sound reason which might be offered for the results we were obtaining might give light on the origin and cause of toxemia of pregnancy.

Toxemia of pregnancy is a condition presenting vastly different degrees of severity in different persons, and also some variation depending on the manner in which such organs of the body as the liver, kidneys and gastro-intestinal tract behave under the strain of pregnancy. On these points quite definite statements may be made; but the influence of the various glands of internal secretion is still more or less problematic.

Pregnancy as a condition is a constant of a woman with a growing fetus within her uterus. There must be some variable which affects different women in this state in the different ways just outlined. This variable can hardly be individual or personal resistance to this strain, although that may play a part, for it is quite impossible to predict from a woman's general physical condition or appearance at the time her pregnancy begins whether or not toxemia is to be a serious menace to her. Furthermore, that toxemia which develops at this time is peculiar to pregnancy and not more than distantly related to those which accompany nephritis, diabetes, etc.

Toxemia of pregnancy is favorably affected by regulation of the diet, and there is no one thing in the daily life of various persons that is so variable as their diet. So-called "autointoxication" occurs in both men and women who habitually overeat, especially if they overindulge in proteins. Toxemia of pregnancy may be thought of as being markedly influenced by an improperly balanced diet, and at the same as being peculiar to pregnancy, because the establishment of a growing fetus within the uterus has made a new and profound demand on the metabolism of the mother.

For fear of being thought faddists in this matter of the influence of diet, we are anxious to reiterate that we believe all four of the main theories outlined earlier in this paper have a direct bearing on toxemia. It is a complex matter, and undoubtedly the organs of internal secretion, the demands of the growing fetus, the condition of the gastro-intestinal tract, and lastly the condition of the liver, all have more or less influence, either directly or indirectly. The balance between normal and abnormal pregnancy is so delicate, however, that it requires only some slight disturbance to upset this equilibrium. We believe that a deficiency in carbohydrates is usually the disturbing element, and that the mechanism by which carbohydrate starvation produces toxemia of pregnancy is quite definite.

Carbohydrates are not only well tolerated but actually demanded in the metabolism of a pregnant woman. This carbohydrate demand is apparently in excess of that of ordinary life, and may be explained

by the fact that the growing fetus urgently requires unusually large amounts of glycogen. This subject has been closely investigated by Slemons in his work on "The Nutrition of the Fetus." [10] He finds that the fetal tissues synthesize their protein from material in the fetal blood which has been acquired by diffusión from the blood of the mother, and that fats and lipoids do not cross the placenta but are almost certainly manufactured in the body of the fetus. They are manufactured from carbohydrates which have passed through the placenta from the maternal blood stream, and the fact that Slemons found a slightly higher mean glucose value on the maternal side than on the fetal side indicates the mechanism by which a steady flow of glucose may be and is maintained toward the fetus. It not only uses it but stores it, the placenta being the glycogen storing organ until the fetal liver can function in this capacity, according to the investigations of Lockhead and Cramer.[11] Glinke [12] and others have shown that glycogen is especially abundant in fetal tissues, and McAllister [13] has demonstrated by his analyses that glycogen, present in the uterus and tubes independent of pregnancy, is most abundant at the time of childbirth, also being especially marked in the placenta.

This demand is an abrupt and unaccustomed drain on the patient, who is called on at no time other than during pregnancy to supply glycogen at this rate to any tissue or organ of the body. The uterus is enlarging rapidly, and in its muscular hypertrophy is making an extra demand for glycogen, while the fetus is growing far more rapidly than the child ever does in its extra-uterine life, thus being another example of unusual hypertrophy.

That the placenta is responsible for this glycogen demand, its object being to obtain this for the benefit of the fetus, is shown by the fact that any condition, such as twin pregnancy, syphilis, or hydatidiform mole, in which there is placental overgrowth, is usually accompanied by undue toxemic manifestations. That is to say, many of these patients give a history of profound or prolonged nausea and vomiting, and some of them exhibit the more serious phases of intoxication. Women with hydatidiform mole, in which there is a proliferation of chorionic tissue, have given us the history of marked nausea and vomiting, beginning shortly after impregnation and continuing up to the time of operation. There are on record [14] a number of cases of eclampsia occurring in the presence of a vesicular mole with no fetus present, and this phenomenon is quite readily understood if this theory of carbohydrate demand and supply be accepted.

If the extra glycogen demand of pregnancy is met by a diet containing a liberal carbohydrate supply, there should be little or no trouble from toxemia. If the demand is not met, the liver will be called on as the glycogen storing organ of the body to make up the deficit. Any glycogen storage in the muscles of the body is only temporary, and here again the liver is depended on for a reserve supply. Glycogen supply to the muscles must be maintained because it is consumed in the functioning of a muscle, so that rest in bed should be valuable treatment from the standpoint of conservation.

As the liver gives up more and more of its glycogen without adequate replacement, whether this is due to fetal demand or to ordinary starvation, a certain amount of fatty replacement, and eventually degeneration, occurs in those cells which originally stored the glycogen. Pflueger [15] has found that glycogen disappears almost entirely during experimental starvation, to be rapidly reformed after rich carbohydrate feeding. The experimental production of a fatty infiltration of the liver cells by means of phlorizin or by chloroform poisoning is familiar to all physiologists, and Rosenfeld,[16] in 1902, stated that after producing this lesion by means of phlorizin he found it possible to clear up the fatty infiltration in one day by giving the animal a meal rich in carbohydrates. The recent publications of Davis, Hall and Whipple [17] have been a most comprehensive contribution to this subject. These authors tested the effect on the liver of various poisons under varying circumstances, and found that they were far more toxic and produced yellow atrophy of the liver more readily if the dogs utilized in the work had been fed a diet high in proteins than if they had been living on a carbohydrate diet. Furthermore, the ingestion of carbohydrates in various forms caused the central necrosis of the liver lobules in poisoned dogs to disappear much more rapidly than in control animals. Roger [18] has made the contention that the liver loses its detoxicating power if made glycogen-free by hunger or other experimental methods, and conversely that all substances introduced produce a less toxic action if the glycogen content of the liver is increased by the simultaneous administration of glucose.

In pregnancy there is at first a relative hunger, brought about by a sudden increase in demand rather than a decrease in supply of certain food elements. Hunger or starvation tends to make the stomach intolerant of food, and the lack of supply is thus promptly augmented. It is, however, a specific starvation or deficiency with which we are concerned, namely, that of carbohydrates. If an exhaustion of the stores of carbohydrates in the body is combined with dehydration of the tissues, acidosis is certain to result. Liver functions are seriously impaired under such circumstances, and the body is flooded with toxins. No food or water is being taken, the patient is feeding on her own body tissues, and thus presents the typical picture of so-called "pernicious" or "intractable" vomiting of pregnancy.

In an article appearing while this was in preparation, Duncan and Harding [19] of Montreal have reported work done along practically identical lines as those of ours, with equally favorable results. They report a series of seventy cases, to which may be added seventy-six that we have to report. The fact that similar theories were formulated and common results obtained in a total of 146 cases, by two groups of investigators

10. Slemons, J. M.: The Nutrition of the Fetus, Am. J. Obst. **80**: 194 (Aug.) 1919.
11. Lockhead, J., and Cramer, W.: The Glycogenic Changes in the Placenta and the Fetus of the Pregnant Rabbit: A Contribution to the Chemistry of Growth, Proc. Roy. Soc. Series B, **80**: 263, 1908.
12. Glinke: Biol. Ztschr., Moscow **2**: 1, 1911.
13. McAllister: J. Obst. & Gynec. Brit. Emp. **34**, 1913.
14. Hitschmann: Zentralbl. f. Gynäk. **28**: 1089, 1904. Gross: Prag. med. Wchnschr. **34**: 365, 1909.
15. Pflueger: Arch. f. d. ges. Physiol. (Pflueger's) **119**: 1, 1909.
16. Rosenfeld: Ergebn. d. Physiol., 1902-1903.
17. Davis, N. C., and Whipple, G. H.: The Influence of Fasting and Various Diets on the Liver Injury Effected by Chloroform Anesthesia, Paper I, Arch. Int. Med. **23**: 612 (May) 1919; The Influence of Drugs and Chemical Agents on the Liver Necrosis of Chloroform Anesthesia, Paper II, ibid., p. 636. Davis, N. C.; Hall, C. C., and Whipple, G. H.: The Rapid Construction of Liver Cell Protein on a Strict Carbohydrate Diet Contrasted with Fasting: Mechanism of Protein Sparing Action of Carbohydrate, Paper III, ibid. **23**: 689 (June) 1919. Davis, N. C., and Whipple, G. H.: Liver Regeneration Following Chloroform Injury as Influenced by Various Diets: Mechanism of Protein Sparing Action of Fat, Paper IV, ibid., p. 711.
18. Roger: These de Paris, 1887.
19. Duncan and Harding: Canad. M. A. J. **7**: 1057, 1918.

working independently, does much to strengthen the force of our argument.

They, too, suggest that a deficiency in carbohydrates is largely responsible for toxemia of pregnancy. We do not, however, agree with them in respect to the physiologic working of what is perhaps the most important point in the carbohydrate deficiency theory. The typical pathologic changes in toxemia of pregnancy are not due, apparently, to the fact that the fetus is greedy of unsaturated fat, for, if correct, this could have little or no bearing on a fatty degeneration of the liver. Nor is it merely because a moderate degree of fatty degeneration of the liver occurs as the result of a few hours' fasting.

We believe that this lack of glycogen in the liver is the result of a direct demand on the part of the fetus for glycogen. This call for glycogen is sent to the liver precisely as it would be from any organ requiring glycogen for consumption or combustion, and its place is taken in the liver by fat deposits. The mechanism by which a vicious circle may be established is quite evident.

REVIEW OF CASES

It has been found convenient for the purpose of study to separate these patients into groups according to the severity of the symptoms at the time each woman was first seen and treatment begun. For the sake of brevity, the record of the cases will be summarized, with a mere statement of the outcome. Women who suffered from nausea without vomiting are not included in this series. All were less than eighteen weeks pregnant.

GROUP 1.—This group is composed of patients complaining of irregularly occurring nausea and vomiting. This appeared most often in the morning, but might be troublesome to the patient at other times during the day. Dietetic treatment as outlined above was sufficient for most of these patients, although a few, especially latterly, were directed to take 1 or 2 ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution at three hour intervals.

Thirty-two patients appear in this group. Twenty-nine of them showed immediate improvement, whereas three required from seven to fourteen days for relief. All obtained permanent relief. One patient required appendectomy.

GROUP 2.—Twenty-nine women comprise these cases. In them the vomiting was persistently growing worse, and nausea was constant. Considerable loss of weight occurred in two, while one woman was slightly jaundiced. It developed later that two of these patients had twin pregnancies. Both of them fell into labor prematurely, and one of them showed some symptoms of toxemia near the end of her pregnancy. Prompt relief from nausea and vomiting was obtained by our treatment in twenty-three cases, while five patients recovered more slowly, as in Group 1. One patient failed to show improvement, and suffered from constant nausea with considerable vomiting, occasionally relieved for only a short time. This woman had been a trained nurse and was the only one of this group who did not go to the hospital. She was nursed by a sympathetic friend who would carry out some of the disagreeable features of the treatment with great vigor, only to relax her efforts as soon as the patient showed temporary improvement. Nausea never completely abated, but pregnancy continued to term.

GROUP 3.—This is composed of fifteen cases of the most serious type. All of these patients exhibited acetonuria, the majority having albumin and casts in the urine. Many were jaundiced and all were emaciated, while food and water were being retained by none. All of the patients were seen in consultation, and immediate therapeutic abortion was expected by most of the attending physicians. Fourteen of these women recovered entirely within from seven to fourteen days.

A therapeutic abortion was performed on one patient. This woman had been under treatment for five weeks in a hospital where a religious objection to abortion existed, and when sent to my service she was deeply jaundiced and emaciated. She was then three months' pregnant and had developed a multiple neuritis with paresthesia of hands, arms, feet and legs. Knee-jerks were absent, and she complained of intense pain on attempts to move her legs. In view of her condition and on the advice of the obstetrician who had been caring for her, an abortion was performed. A transfusion of blood was deemed necessary a few days later on account of her general condition, and she was obliged to remain in the hospital for weeks. The neuritis has not entirely left her after a period of two years, but she has since gone through a pregnancy with success, being one of the patients listed in Group 1 as having been treated for mild toxemia of early pregnancy.

PRELIMINARY REPORT OF CHEMICAL AND EXPERIMENTAL INVESTIGATIONS

Being convinced from clinical experience of the potency of carbohydrates in the treatment of toxemia of pregnancy, and having theorized as to the physiologic mechanism of their action, we have endeavored to prove this by certain experimental and chemical investigations. We desire to make a brief preliminary report of this work at this time, and plan to follow this paper with one that shall deal with our investigations and their application to toxemia of both early and late pregnancy.

We are attempting to produce the pathologic lesions of toxemia in pregnant experimental animals, and have had moderate success. This work is being continued, and if successful will be extended.

The procedure of our chemical investigations has been based on two established facts, namely, (1) the liver is the carbohydrate storage organ of the body, and (2) according to necropsy findings in fatal toxemias, the liver undergoes fatty degeneration. It is evident that fat is first substituted for glycogen in the cells, and finally when liver function is seriously impaired by glycogen depletion, this pathologic change may well be classed as an actual degeneration.

On this basis we have endeavored to devise a test for liver efficiency and deficiency. We have established a normal time curve of the liver's ability to store a definite amount of glucose given intravenously to normal pregnant women. A study of similar curves in cases of toxemia points to the conclusion that the prognosis is good if the liver can store within thirty minutes as much as from 75 to 105 mg. of glucose per hundred cubic centimeters of blood, this ratio of storage being approximately equivalent to, or slightly more rapid than that of a normal pregnant woman. If only 30 to 40 mg. of glucose can be handled, a grave condition is faced, this being much less than normal. We have reasoned that a need for carbohydrates exists in both instances. In the first the liver has been taxed but is able to restore itself if carbohydrate is supplied, whereas in the second case the depletion of glycogen and the deposit of replacement fat has been so extensive that the cells have lost their function, and the damage may be termed necrosis or degeneration.

The cases we have studied include eclampsia, pernicious vomiting, nephritis complicating pregnancy, chorea, and one case of accidental separation of the placenta with kidney involvement. A control series of tests is being carried out on all patients after recovery, and these, without exception, have corresponded to the normal cases.

CONCLUSIONS

1. The problematic relationship between mild and profound toxemias of pregnancy warrants a study of the former in order to gain information regarding the latter.

2. The development of a course of treatment, the success of which seemed to depend on the use of carbohydrates in large amounts, led to the assumption that a deficiency in carbohydrates has an important bearing on the origin of toxemia of pregnancy.

3. Carbohydrate deficiency during pregnancy is of twofold origin; (1) a relative deficiency due to an unexpected demand for glycogen on the part of the fetus and the uterus, and (2) an actual deficiency, augmented in the presence of nausea and vomiting, from lessened carbohydrate intake.

4. Carbohydrate deficiency in the maternal organism causes a glycogen depletion of the liver, because this is the organ in which carbohydrates are stored for use as needed.

5. There is experimental evidence to show that liver function is impaired and the body flooded with toxins after carbohydrate starvation.

6. Pathologic changes in the liver lobules which are similar to those of fatal toxemias of pregnancy can be produced experimentally by the use of certain chemical poisons. These changes can be made to disappear rapidly by the ingestion of carbohydrates.

7. Mild cases of nausea and vomiting may be controlled by so regulating the diet that there is a preponderance of carbohydrates, and an avoidance of more than short intervals of fasting by the taking of food more frequently than under ordinary circumstances. This increased carbohydrate intake should be augmented by giving the patient from 8 to 16 ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution daily by mouth. This may be given in 1 or 2 ounce doses.

More severe cases require more rigid attention. After an initial period of rest, gastric lavage and the introduction of saline cathartics through the stomach tube, small amounts of liquid food are allowed alternately with from 1 to 2 ounces of the glucose and soda solution, described above, every two hours. By mouth or by bowel it should be possible to give the patient 1 quart of this solution daily.

In the seriously toxic patients the treatment is pushed even more vigorously with the addition of intravenous injection of from 15 to 25 gm. of glucose in from 250 to 300 c.c. of water. This is given from one to three or more times daily, according to the needs and response of the patient. The injections should be made in close accordance with the directions in the body of this paper. Other treatment is carried out along much the same lines as that for the second group.

8. Not only is intravenous injection of glucose solution a valuable therapeutic measure, but the rate of its absorption and storage by the liver is an index of liver efficiency which is of prognostic value. More rapid storage than normal is favorable because it indicates that the liver, depleted as it has been of glycogen, is nevertheless still able to restore itself. Storage which is slower than normal offers an unfavorable prognosis, since this is evidence that liver efficiency is impaired. Our clinical evidence regarding these views is still too limited to permit a definite conclusion, but our experience thus far has been entirely confirmatory.

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THE THERAPEUTIC USE OF CARBON DIOXID AFTER ANESTHESIA AND OPERATION*

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There is ample experimental evidence that inhalation of carbon dioxid, properly diluted with air or oxygen, should be a therapeutic agent of great potency. In fact, however, aside from the indirect use of this gas in the rebreathing methods of anesthesia, particularly with nitrous oxid, inhalation of carbon dioxid is not used in surgery. Likewise in internal medicine it is not employed, except perhaps in the Nauheim bath treatment of cardiac conditions; and here there is no agreement as to whether or not the inhalation is a factor.

This lack of use is the more striking when we note the present deficiency in therapeutic agents to stimulate breathing, and the great need for one; for carbon dioxid is Nature's own stimulant to the respiratory center.[1]

On the circulation its influence is equally important—particularly on the venous return to the right heart. It is the insufficiency of this return which chiefly gives to postoperative depression its similarity to the effects of hemorrhage. Thus, recovery of the circulation and a rapid return of a normal arterial pressure are the results to be expected from the restoration to the blood and tissues of the carbon dioxid lost during anesthesia and operation.[2] At least, this is the result which we have obtained.

The reason for the neglect of carbon dioxid is not far to seek. It lies in the fact that without a reliable method and apparatus, or without the acquisition of great skill and tact in a practically unexplored field, the administration of carbon dioxid might be dangerous. Indeed, if insufficiently diluted with air or oxygen, it would be quickly fatal. Doubtless, in the not distant future it will seem almost incredible that progress should have been halted for a long period for want of an apparatus for controlled gas administration. In fact, however, only recently, after ten years of effort in the laboratory where two of us work, has an apparatus

* In the text of this paper we deal only with such degrees of functional depression as commonly occur after anesthesia and operation. Mention should, however, be made here of work done by us during the winter of 1917-1918 which, although itself negative in result, was nevertheless an essential preliminary to this. It was a study of accident cases brought in by the ambulance. It revealed not a single case of "shock," other than hemorrhage or concussion, during ten weeks at a very large and active hospital in a field where such cases would be expected. Apparently this ignis fatuus of physiology is the product—at least in discoverable amounts—only of the battle field and the operating room, arising doubtless on the one from unrelieved pain, hemorrhage or cold, and in the other largely from some element in anesthesia. Our work had the approval of the Surgeon-General of the Army and was carried out at Bellevue Hospital, New York. We take this occasion to express our thanks to the directors of that hospital, to Dr. Charles Norris and Dr. Adrian V. S. Lambert, and to Col. F. F. Russell of the Surgeon-General's Office.

1. Henderson, Yandell: Bull. Johns Hopkins Hosp. **21**: 235, 1910.

2. Henderson, Yandell: Am. J. Physiol. **27**: 132, 1910. Henderson, Yandell, and Harvey, S. C.: Ibid. **46**: 533 (Aug.) 1918. Henderson, Yandell; Prince, A. L., and Haggard, H. W.: Observations on Surgical Shock, J. A. M. A. **69**: 965 (Sept. 22) 1917. Henderson, Yandell, and Haggard, H. W.: J. Pharmacol. & Exper. Therap. **11**: 189 (April) 1918. Henderson, Yandell; Prince, A. L., and Haggard, H. W.: Ibid. **11**: 203 (April) 1918. Haggard, H. W.: Low Levels of Alkaline Reserve under Surgical Conditions, Tr. Sect. Surg., Gen. & Abd., A. M. A., 1918, p. 139.

at all suited to clinical use become available; and yet it is very simple. It needs only a single operator; but he must be an expert in the vital signs of anesthesia and of the powerful functional effects of carbon dioxid, and he must at all times be keenly observant of the patient under treatment.

The first apparatus which we employed was, on the contrary, quite complicated, requiring the constant attention of three or four operators. It involved an air blower, electric motor, tank of carbon dioxid, gas meters, and accessory devices,[3] and was unsuited, therefore, to general clinical use. It had, however, the experimental advantage that with it any volume of air of any desired percentage of carbon dioxid could be delivered into the mask from which the patient inhaled.

With this apparatus we were enabled, through the courtesy of Drs. John F. Erdmann and Thomas H. Russell, to make, at the Post-Graduate Hospital, New York, what we believe are practically the pioneer observations (excepting those of Cotton [4] and of Levy [5]) on the effects of administration of carbon dioxid after ether anesthesia and major surgical operations.

Obviously, in order to show the effects of inhalation of carbon dioxid it was essential that we should first establish, as a standard of comparison, how patients usually behave. In this there is considerable difficulty; for, as we found and as indeed every one knows, there are the widest variations according to the length of anesthesia, its depth, preliminary medication, the character of the patient, and the severity of the operation. Below is presented the abbreviated protocol of a case fairly typical of conditions which are, however, frequent:

PROTOCOL OF CONTROL CASE IN WHICH NO CARBON DIOXID WAS ADMINISTERED

W. M., man, aged 34; double hernia; ether administration, sixty minutes.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	132	Before operation
0	...	In bed, after operation
5	120	Gasps and apneas; cyanotic
25	...	Vomiting
30	108	Depressed respiration; cold, cyanotic, pallid skin
55	102	No improvement
65	...	Vomiting
80	110	Signs of returning consciousness

It is here to be seen that, after the patient was back in bed, arterial pressure continued to fall for an hour—to a level 30 mm. below normal. Respiration during this time was notably depressed. The elimination of ether was correspondingly slow.

EFFECTS PRODUCED BY THE INHALATION OF CARBON DIOXID

While other control cases, after operations for appendicitis, hernia, gallstones, etc., showed these features in more or less marked degree, this case, in our observations, is by no means an unusual or extreme illustration of postoperative depression. Using it as a rough standard of comparison, we give the protocols of four cases illustrative of the effects observed under inhalations of carbon dioxid.

3. Parts of a Connell nitrous oxid-oxygen apparatus were used, for the loan of which and for assistance in assembling the whole apparatus we are indebted to Mr. C. A. Mandolini of the Scientific Apparatus Company, New York City.

4. Cotton, F. J.: Acapnia: Its Surgical Importance, Boston M. & S. J. **167**: 432, 1912.

5. Levy, Ettore: The Clinical Use of Carbon Dioxid with Oxygen, J. A. M. A. **58**: 773 (March 16) 1912.

PROTOCOLS OF CASES IN WHICH CARBON DIOXID WAS GIVEN

As it seemed that the benefits hoped for from inhalation of carbon dioxid might possibly involve also grave danger during the inhalation—an anticipation which fortunately was not verified—every precaution was taken to minimize the risk. In all cases the mask was held by one of us (R. C. C.), who has had an extensive experience as an anesthetist, and particularly in the administration of nitrous oxid and rebreathing. At least one other of us kept an uninterrupted watch on the patient, while one kept his eyes on the gages and meters of the apparatus and his hands on its cocks and switches. In this work we are indebted to Dr. W. H. Taliaferro for assistance.

CASE 1.—S. S., man, aged 46; double hernia; ether administration, seventy minutes; postoperative administration of carbon dioxid.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	136	Before anesthesia
0	120	In bed, after operation
1	...	Inhalation of 10 per cent. CO_2 begun
2	...	Marked respiratory augmentation
3	136	Breathing 35 liters of air per minute
4	160	Inhalation reduced to 6 per cent. CO_2 Warm, pink skin; Sweating
31	...	CO_2 stopped; patient fully conscious, but emotionally unbalanced; crying; wanted to get out of bed
33	132	
	136	Four days later

No nausea, vomiting or gas pains; an uneventful recovery.

CASE 2.—R., woman, aged 20; appendicitis and adhesions; prolonged illness; patient weak; ether administration, forty minutes; postoperative administration of carbon dioxid.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	100	Before anesthesia
0	96	In bed, after operation; 10 per cent. CO_2 started
2	110	
4	130	Breathing 40 liters per minute; CO_2 reduced to 8 per cent.
18	...	Struggling; breathing 40 liters per minute
19	122	Conscious; CO_2 stopped
24	122	
	104	Three days later

No nausea, vomiting or gas pains; water given as asked for; an uneventful recovery.

CASE 3.—L. S., man, aged 26; appendicitis and adhesions; ether administration, sixty minutes.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	115	Before anesthesia
0	108	In bed after operation
5	102	Cyanotic
8	96	Inhalation of 8 per cent. CO_2 begun
15	112	No respiratory augmentation
18	...	Respiration augmented
19	...	Fine pink skin color
21	118	Breathing 35 liters per minute; talks rationally
43	116	CO_2 stopped
45	112	
	115	Three days later

No nausea, vomiting, or gas pains; allowed to drink water freely; an uneventful recovery.

CASE 4.—A. S., woman, aged 32; exploratory laparotomy and removal of appendix and gallstones; ether administration, fifty minutes; uneventful recovery.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	118	Before anesthesia
0	116	In bed, after operation
1	...	Inhalation of 8 per cent. CO_2 begun
2	...	Slight increase of respiration; color pale
6	...	Increased respiration
11	126	Breathing 30 liters per minute; pink skin
20	134	Struggling; responds to verbal suggestions
28	136	Answers questions rationally
31	134	CO_2 stopped
32	...	Vomited a little yellow fluid
180	118	
	120	Four days later

No subsequent nausea, vomiting or gas pains; bowels easily stimulated to function; uneventful recovery.

In these four cases, typical of a total of seventeen so treated, certain points deserve notice:

Within a few minutes after the initiation of the inhalation of carbon dioxid, there was a great augmentation of respiration. Knowing the volume of air delivered to the mask by our apparatus, we could estimate quite accurately the volume of the patient's breathing. A normal well-developed adult at rest in bed breathes from 6 to 8 liters of air a minute. In our control cases, observed without treatment, the volume of breathing was estimated often at less than half as much: hence the common cyanosis. Under the inhalation of carbon dioxid, the volume of breathing was increased to amounts from 35 to 70 liters per minute, volumes corresponding to those which the subjects would have breathed under vigorous physical exertion.

The greater part of the ether was thus rapidly ventilated out of the blood. In from fifteen to twenty-five minutes the patient was conscious, although prone to emotional disturbances, sometimes of anger, but oftener of hilarity. Frequently the patient fell asleep fifteen or twenty minutes after the termination of the inhalation. Presumably there was a slight secondary rise of ether in the blood due to continued diffusion from the muscles, adipose tissue, etc.

Immediately after the operation, the arterial pressure was usually from 5 to 15 mm. below normal, with a tendency to fall further. Under inhalation of carbon dioxid it rose rapidly, sometimes 30 or 40 mm. within four or five minutes; and at the end of the first ten or fifteen minutes it was often 10 or even 20 mm. above normal. It then tended gradually downward again, although remaining above the normal level. After the termination of the inhalation it returned in a few minutes to a practically normal value. It never fell appreciably thereafter.

To the observer, the return of a normal pink skin color[6] was one of the most striking effects of the inhalation of carbon dioxid, indicating a return of the normal capillary circulation, a feature of fundamental importance in the recovery from postoperative circulatory depression.

As the patients came off the operating table, they showed invariably the inadequately filled veins which indicate a reduced venous return to the right heart. To combat this condition effectively is, in our opinion, to solve practically the whole problem of the treatment of postoperative circulatory depression. Under inhalation of carbon dioxid, the veins became filled to an extent even exceeding that seen after vigorous physical exertion. We limited the strength of the carbon dioxid administered by this sign, in order not to overload the right heart with blood.

Although vomiting was not entirely absent, it was much less than in untreated patients. The patients were allowed to drink water freely. The inhalations seemed to diminish greatly the usual postanesthetic thirst.

We anticipated from previous experimental observations on animals that one of the benefits to be derived from inhalations of carbon dioxid would be found in the restoration of normal tonus in the stomach and intestine, and thus in the prevention of gas pains and constipation.[7] While no patient developed gas pains, and all recovered normal bowel movements easily, our total of only seventeen cases treated is not sufficient to warrant a definite conclusion on this point.

6. Bryant, John, and Henderson, Yandell: Closed Ether and a Color Sign, J. A. M. A. **65**: 1 (July 3) 1915.

7. Henderson, Yandell: Am. J. Physiol. **24**: 66, 1909. Cotton (Footnote 4).

BLOOD ALKALI

We turn now to a matter of profound theoretical significance. It is well established that under anesthesia and operation there is frequently a considerable reduction in the alkali of the blood as measured by its carbon dioxid combining power.[8] But the cause, the nature and the significance of this reduction are not established.

Recent work by Henderson and Haggard[9] has demonstrated experimentally that a reduction of blood alkali may be induced by two distinct processes: (*a*) The entrance of acids into the blood may partially neutralize the alkali. This is the acidotic process. Or (*b*) excessive breathing with blowing off of the carbon dioxid of the blood, reinforced perhaps by diminished carbon dioxid formation in the tissues under anesthesia, leaves the blood abnormally alkaline. In compensation, alkali passes out of the blood, partly perhaps into the urine, but chiefly presumably into the tissues. This is the acapnial process.

To distinguish between these two—superficially similar but fundamentally unlike—conditions of low blood alkali or, as we term it, hypocapnia, experiments on animals have afforded a simple and conclusive test. It consists in the inhalation of 6 or 8 per cent. carbon dioxid. If the condition is of acidotic origin the extreme acidosis, due to the summation of carbonic acid and fixed acids, aggravates the symptoms, and, if pushed, may kill the subjects in half an hour. On the other hand, if the low blood alkali is of acapnial causation, the increase of carbonic acid in the blood induces a compensatory process by which alkali is recalled, presumably from the tissues, into the blood in normal, or even supernormal, amounts. During the period of inhalation of carbon dioxid and high hydrogen ion concentration, recovery of the circulation, respiration and intestinal motility occurs.

With this distinction in mind it was only after very cautious preliminary tests on patients (of which we have omitted an account) that we ventured to push the inhalations with the intensity indicated in the cases reported. As none suffered any ill effect, but all the patients were rapidly restored to a condition of approximate functional normality, their low blood alkali, so far as it occurred, was clearly not of acidotic, but rather of acapnial origin.

To clinch this point we report observations which we were enabled to make at the New Jersey State Hospital for the Insane, Trenton, through the courtesy of Dr. Henry A. Cotton, medical director, and Dr. John W. Draper, of New York, attending surgeon:

CASE 5.—M. F., female, underwent operation for developmental reconstruction, involving the removal of 150 cm. of terminal ileum, about one third of the colon, and a number of mesenteric glands. Ether was administered for 120 minutes. Immediately after the patient was returned to bed, carbon dioxid inhalation was begun and continued for half an hour with the simplified apparatus. Samples of blood were drawn from an arm vein (*a*) before anesthesia, (*b*) at the end of operation, and (*c*) after termination of the carbon dioxid inhalation. They were equilibrated with air containing 5.6 per cent. of carbon dioxid at room temperature, and were analyzed for their carbon dioxid content, that is, the alkali in use.

Analytic results: $a = 53$; $b = 48$; $c = 58$ per cent. carbon dioxid by volume.

8. Morriss, W. H.: The Prophylaxis of Anesthesia Acidosis, J. A. M. A. **68**: 1391 (May 12) 1917. Reimann, S. R., and Bloom, G. H.: J. Biol. Chem. **36**: 211 (Oct.) 1918.

9. Henderson, Yandell and Haggard H. W.: J. Biol. Chem. **33**: 333, 345, 355, 365 (Feb.) 1918; **39**: 163 (Aug.) 1919.

CASE 6.—M. A., female, was operated on as in the previous case. Ether was administered for 120 minutes.

Blood samples: $a = 56$; $b = 42$; $c = 57$ per cent. carbon dioxid by volume.

CASE 7.—S. McK., female, had a 5.6 kg. abdominal fibroid tumor and 12 liters of ascitic fluid removed. Ether was administered for fifty-five minutes. The arterial pressure before operation was 154 mm.; after removal of the tumor, 100; after carbon dioxid inhalation, 160.

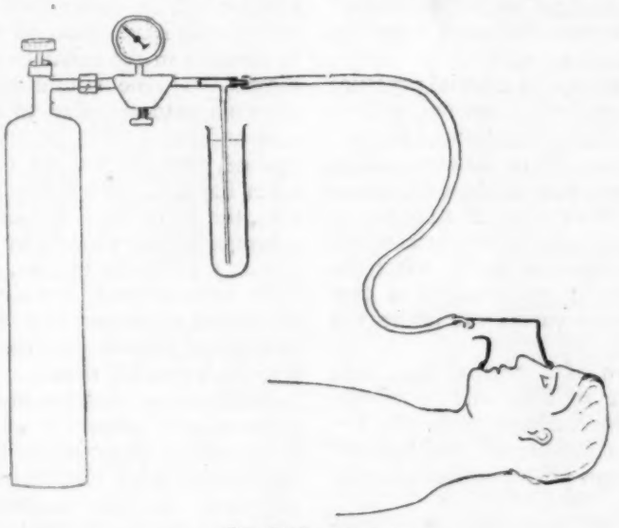
Blood samples: $a = 56$; $b = 48$; $c = 64$ per cent. carbon dioxid by volume.

CASE 8.—M. M., female, was operated on for appendicitis. Ether was administered for fifty-five minutes.

Blood samples: $a = 59$; $b = 52$; $c = 61$ per cent. carbon dioxid by volume.

THE APPARATUS

The simplified apparatus used in the last series of observations is shown in the accompanying illustration. It involves a tank of carbon dioxid of the best beverage quality, and a reducing valve. From the valve the gas passes to a T-tube, one limb of which leads to a capillary tube 1.8 mm. in diameter and 10 mm. long, and the other limb to a glass tube projecting down into a vessel of water. The latter serves both as a gage and as an escape valve, preventing any excessive pressure on the capillary. Under the maximum pressure possible, not more than 8 liters of gas pass through the capillary, which in turn is connected to the mask by a 5 or 6 mm. rubber tube.



Simplified apparatus.

The construction of the mask is simple, but involves the idea of preventing any possibility of accumulation of gas in the mask, with consequent excess administration. It depends on the subject's own breathing to draw the gas in and to mix it with air. These purposes are achieved by delivering the gas through a number of small openings just outside the open end of a short, large tube (from 2 to 3 cm. in diameter) connected with the mask. During expiration, or apnea, the gas merely wastes into the outside air; during inspiration it mixes with the inspired air. The operator controls the administration according to the reactions of the patient. With this apparatus the patient receives approximately one half of the gas which the apparatus measures off per minute. The percentage of carbon dioxid in the inspired air depends on the volume of breathing, and the administration must be controlled accordingly.

These investigations are being actively continued at St. Bartholomew's Hospital for Diseases of the Alimentary Canal, New York, where every facility has been provided for the further development of the carbon dioxid therapy.

CONCLUSIONS

The observations here reported indicate that the inhalation of carbon dioxid, properly diluted with air, is a highly beneficial and, with care, a safe treatment after anesthesia and operation.

The beneficial effects observed are: (*a*) an augmentation of breathing which rapidly ventilates the anesthetic out of the blood; (*b*) a powerful stimulant effect on the circulation, particularly on the venous return, and a rapid restoration of arterial pressure, without subsequent relapse or unfavorable consequences; (*c*) marked decrease of postoperative nausea, vomiting and thirst, and (*d*) a possible restoration of intestinal tonus.

TETANY IN A CASE OF SPRUE*

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Early in 1919, Bassett-Smith[1] reported a case of sprue in which tetany developed shortly before the death of the patient. The author stated that his was the first published account of this complication of the disease. As no similar reports have been found in the literature since that time, it was considered that this case might be of interest both on account of its rarity and because of certain significant features bearing on the question of the etiology of tetany.

REPORT OF CASE

History.—R. W. C., an American medical missionary, aged 41, entered the private ward of the Presbyterian Hospital, Sept. 20, 1919, complaining of abdominal pain and diarrhea. As in all previous visits, he was cared for by Dr. David Bovaird. The patient had had measles and scarlet fever as a child; dengue in 1909, and bacillary dysentery in 1912. Since 1907, when the patient arrived in the Philippine Islands, small ulcers had been continuously present in his mouth, and he had been bothered by diarrhea of a greater or less degree. In 1914, his condition became very much aggravated. The tongue became red, swollen and tender, and the small white ulcers along its margin merged. Moderate abdominal tenderness with slight distention accompanied a troublesome diarrhea. The stools were large, white, semifluid and frothy, with an offensive odor. He suffered from hemorrhoids, and fissures appeared in the margin of the anus. In the six months preceding his first entrance to the Presbyterian Hospital, the patient lost 40 pounds.

First Admission.—The patient was admitted, July 24, 1914, and discharged, Aug. 17, 1914. The lips were cyanotic; there were white spots on the tongue; on the buccal mucous membrane were two shallow ulcerations with a narrow zone of inflammation around them. There was a systolic murmur at the apex and the base; the abdomen was tender and tympanitic. The systolic blood pressure was 114; the diastolic, 70. Blood examination revealed: hemoglobin, 88 per cent.; red blood cells, 4,800,000; white blood cells, 9,200; polymorphonuclears, 56 per cent.; lymphocytes, 39 per cent.; eosinophils, 5 per cent. The stool contained no ova or parasites; the Cammidge test was positive; amylase was diminished. The diagnosis was "sprue." Under a regulated dietary regimen of fruit and proteins, the patient

* From the Presbyterian Hospital and the Laboratories of Surgical Research, Columbia University College of Physicians and Surgeons.

1. Bassett-Smith, P. W.: Lancet **1**: 178 (Feb. 1) 1919.

improved considerably, and on leaving the hospital went to live in New Jersey, where he seemed to be on the road to recovery. Exercise, however, brought on renewed attacks, and the patient was forced to reenter the hospital in 1916.

Second Admission.—The patient was admitted, March 31, 1916, and discharged, Aug. 5, 1916. He presented about the same symptoms as on his previous admission, with the addition of anemia. Blood examination revealed: hemoglobin, 68 per cent.; red blood cells, 3,600,000; white blood cells, 9,200; polymorphonuclears, 71 per cent.; lymphocytes, 28 per cent.; eosinophils, 1 per cent.; blood Widal test, negative; blood culture, negative. Throat culture revealed no Klebs-Loeffler bacilli. The Wassermann test was negative. The stool was light and frothy; it contained no ova, parasites, blood or pus; trypsin and amylopsin were markedly diminished; starch granules, striated muscle fibers and fatty acid crystals were seen. Total fat was 39.0; neutral fat, 14.09; fatty acids, 24.91; 60 per cent. or more of the organisms noted were gram positive. A serial test meal was given. The gastric contents after one-half hour showed: free hydrochloric acid, 38; total acid, 62; after one hour: free hydrochloric acid, 41; total acid, 58. A roentgenogram of the stomach revealed a small amount of residue five hours after eating. The diagnosis was "sprue." The patient had occasional attacks of nausea and vomiting. Improvement began with a low fat diet, composed mostly of fruits and lime-water, and continued up to the time he left the hospital.

Third Admission.—The patient returned to the Philippines in October, 1917, where he seemed to do well until January, 1919; at this time his trouble returned with renewed force. He had from two to four light, frothy stools a day, and for the first time was troubled with pain in the upper part of the esophagus. In the late summer, he returned to the United States and reentered the Presbyterian Hospital. He was weak, emaciated and anemic, and his speech was feeble. The tongue was red and raw, with numerous ulcerations, and the buccal mucous membrane was marked by erosions. A faint blow was audible over the mitral ring. Liver dulness was diminished. The abdomen was distended and tender, but there was no mass or rigidity. The spleen was not palpable. The testes were tender.

September 21, blood examination revealed: hemoglobin, 65 per cent.; red blood cells, 3,700,000; white blood cells, 10,100; polymorphonuclears, 69 per cent. There were from one to three foul smelling, light brown and frothy stools a day; they contained no blood or parasites. The Wassermann test was negative. The blood was of Group II. Proctoscopic examination revealed a uniform, curdy, milklike film covering the mucosa, which was dry and shiny; there were no ulcerations; there were internal hemorrhoids.

October 1, 800 c.c. of blood were transfused without reaction.

October 6, the hemoglobin was 70 per cent.; red blood cells, 3,500,000. The patient had occasional attacks of nausea and vomiting.

October 30, he vomited. Examination of the vomitus revealed: free hydrochloric acid, 0; total acid, 24; guaiac test, negative. The sores of the mouth became worse.

October 31, hemoglobin was 63 per cent.; red blood cells, 2,600,000; no abnormalities of the red blood cells were noted.

November 17, in the evening, the patient vomited and complained of generalized abdominal pain. The abdomen was retracted and tense; deep pressure in every part gave pain, which was somewhat relieved later by a poultice.

November 18, 4:30 a. m., a stool of the usual appearance was passed; at 6 a. m., the patient vomited fluid with dark brown particles; at 6:30 a. m. he was in great distress. He said he had been in pain all night both from his abdomen and on account of contractures which had appeared in his extremities. On examination the patient presented the picture of tetany. The upper extremities were extremely spastic, drawn up and flexed at the elbows, flexed and rotated outward at the wrists. The fingers were flexed at the metacarpophalangeal joints, and the interphalangeal joints were extended. The lower extremities were also spastic, with flexion at the knees and extension at the ankles. The retraction and general tenderness of the abdomen, because there was no fever or localization of the pain, was looked on as an expression of a generalized state of muscular hypertonicity. The patient vomited again. Examination of the vomitus revealed free hydrochloric acid, 0; total acid, 0. Spasms of the extremities disappeared in the late morning. The temperature was between 98 and 99 F.; the pulse, from 70 to 90. The serum calcium was 8 mg. per hundred c.c. (normal, from 9 to 11 mg. per hundred c.c.). An infusion of 400 c.c. of a 0.2 per cent. calcium lactate solution was performed. Thirty minutes later the serum calcium was 8.3 mg. per hundred c.c.

November 19, hemoglobin was 70 per cent.; red blood cells, 3,000,000; polymorphonuclears, 68 per cent. The patient still had abdominal pain, but on account of the normal temperature and low pulse rate, no new abdominal complication was suspected. The serum calcium was 6.5 mg. per hundred c.c. An infusion of 400 c.c. of a 0.2 per cent. solution of calcium lactate was performed. Thirty minutes later the serum calcium was 6.5 mg. per hundred c.c. The patient had frequent involuntary stools during the day. The plasma carbon dioxid capacity was 57.6 per cent. by volume.

November 20, the temperature for the first time rose above normal (102 F.). The pulse was 130. Tetanic contractions reappeared. A transfusion of 400 c.c. of blood was performed. Thirty minutes later the serum calcium was 7.5 mg. per hundred c.c. An infusion of 350 c.c. of a 0.2 per cent. solution of calcium lactate was performed.

November 21, the temperature was 103.4 F.; pulse, 124. There was twitching of the extremities. An infusion of 800 c.c. of a 0.1 per cent. solution of calcium lactate in 0.4 per cent. saline was performed. The patient died.

During the last forty-eight hours, the patient vomited almost constantly except after lavage. The vomitus was first dark green, and later, dark brown. The fever which developed during the last twenty-four hours, by which time the abdomen had relaxed, was considered secondary to the constant vomiting.

The final diagnosis was: tetany; acute dilatation of the stomach, and sprue.

Summary of Postmortem Findings.—There were sprue (clinical); atrophic enteritis; atrophy of the papillae of the tongue, and general purulent peritonitis. The abdomen contained about 300 c.c. of dirty, yellow, purulent fluid. The intestines were matted together with yellowish fibrin and covered with a purulent exudate. The appendix was gangrenous, with rupture; it was hanging over the pelvic brim; in its middle it was necrotic and perforated. There was acute dilatation of the stomach and intestines; the stomach, the duodenum and 2 feet of the jejunum were hugely dilated with fluid and a little gas. The gastric musculature was not thickened; there were cardiac hypertrophy; chronic cardiac valvular disease (aortic valve), and generalized arteriosclerosis. The bone marrow was hypertrophic. The parathyroids were normal.

COMMENT

A diminished concentration of calcium in the blood has been shown to produce tetany, and in the case under discussion, the lack of this element was demonstrated by analysis of the blood. As bearing on the question of the cause of the disturbance of calcium metabolism in this particular individual, the following points are emphasized:

1. According to von Noorden, calcium is absorbed in the upper part of the small intestine, combined with phosphoric and carbonic acids, but more especially with fatty acids in the form of soaps. Sprue patients, however, and many stool examinations proved it in this case, cannot readily digest fats. Is it not conceivable, then, that calcium was carried on with the fats, and that its absorption through the diseased intestinal mucosa was insufficient to maintain the proper balance? This is mentioned as a possible predisposing factor.

Calcium is mostly excreted into the large bowel; and in the present instance, owing to the prolonged intes-

tinal irritation lasting over six or more years, the excretory rate of the substance by this outlet may have been abnormally increased. Such abnormal elimination would have tended to disturb still further the calcium equilibrium.

2. Clinically, tetany is occasionally associated with gastric dilatation, usually following pyloric obstruction and accompanied by considerable vomiting. We have produced pedal spasms in dogs by simply closing the pylorus with a ligature, and have found, as did McCann,[2] that an increased concentration of carbon dioxid bound as bicarbonate in the plasma, and a gradual diminution and final loss of free or combined hydrochloric acid in the gastric contents, resulted from this procedure. Gastric tetany is not known to be associated with a diminished calcium concentration in the blood, although calcium therapy relieves it.[3] Comparison with this case reveals certain similarities and decided differences as well. There was some vomiting, and at necropsy the stomach as well as the duodenum was found hugely dilated, but with no pyloric obstruction. A specimen of vomitus examined shortly after the onset of tetany showed that there was no acid present; however, in the presence of a patent pylorus this may well have been due to duodenal regurgitation. A Van Slyke carbon dioxid determination revealed no alkalosis (57.6 c.c.). Furthermore, there was an actual decrease in the calcium concentration of the serum unrelieved by calcium lactate infusions. These findings are opposed to the classification of this case as one of simple so-called "gastric tetany," even though the factors involved may have had some causal influences.

3. Tetany occurs as a rare complication of acute infectious diseases, but in this instance it seems far fetched to attribute any direct etiologic significance to the appendicitis and general peritonitis found at necropsy.

4. Calcium infusions can usually be counted on to abolish the seizures of tetany, but in this case there was no abatement, and the failure was mirrored in the blood analyses. It was a great surprise to find that injections of as much as 400 c.c. of a 0.2 per cent solution of calcium lactate, which theoretically should increase calcium to the extent of about 5 mg. per hundred c.c., had no such effect. Within thirty minutes after both infusions, the quantity of the calcium introduced had left the blood flowing through the peripheral circulation. Was the calcium excreted in that short period into the intestine, was the condition of the blood colloids such that the calcium present existed in saturated solution and any additional calcium was immediately precipitated, or was calcium immediately claimed by lime-starved tissue cells? That this is not the case in parathyroid tetany is shown by the following analyses, made at the same time as the foregoing determinations:

In a dog in acute tetany, the serum calcium was 5.1 mg. per hundred. Infusion of 40 c.c. of 1 per cent. calcium chlorid solution was followed by complete cessation of symptoms. The serum calcium, thirty minutes later, was 9 mg. per hundred.

That the condition of the blood was an important factor is suggested by the rise in calcium following the transfusion of normal blood. We consider some of these points suggestive, but not conclusive enough to form any hypothesis for explaining the course of events which led up to the state of tetany.

2. McCann, W. S.: J. Biol. Chem. **35**: 553 (Sept. 18) 1918.
3. Kinnicutt, F. P.: Am. J. M. Sc. **138**: 1, 1909.

AGREEMENT IN RESULTS OF THE WASSERMANN REACTION

A STUDY OF TESTS PERFORMED BY TWO LABORATORIES IN THREE THOUSAND SUCCESSIVE HOSPITAL ADMISSIONS *

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It has been the custom at the Psychopathic Department of the Boston State Hospital, for the past few years, to have the blood of each patient examined by two independent laboratories. This was done primarily for the safeguarding of the patient against erroneous conclusions based on one test; and, secondarily, in order to obtain information which would be valuable to ourselves in estimating the results of the laboratories; that is, to put us in a position in which we would be able to interpret the findings more correctly. The two laboratories selected for this purpose were the laboratory of the Massachusetts Department of Health and the laboratory of the Boston City Department of Health. Dr. Hinton and Dr. Castleman, of the respective laboratories, were most cooperative and desirous of having this work carried out, both for our own information and for what service it would be to them in estimating their own work. The spirit of these men cannot be too highly commended, and the results that are presented herewith are indicative that not only in this respect, but in all others, they have attempted to bring a high standard into their laboratories.

A Wassermann test made on each patient admitted to the hospital is, and has been, a routine since the opening of the hospital. During the time that the tests were made in the two laboratories, it was customary to bleed the patient into two test-tubes, one tube being sent to the city laboratory, the other to the state laboratory, conditions thus being as nearly similar as possible. To date, 3,000 patients have had their blood tested in this way. In some cases the test was repeated several times, especially in those cases in which there was a difference in the report.

Without going into any details of the technic used by these two laboratories,[1] it may briefly be stated that Laboratory A uses three cholesterinized antigens of different sensitivities to check each positive reaction; Laboratory B, in addition to the cholesterinized antigen, employs an acetone insoluble antigen.

Whenever possible, those cases in which the reports were not the same from the two laboratories were retested, in an endeavor to get a report free from technical error. Unfortunately, the patients, as a rule, stayed only a few days at the hospital, and it was not possible to carry this out as far as was desired in many instances. However, in a number we were able to get a uniformity of results after the first test, rather indicating that the result of the first test might have been due to some technical error; and this, as a possible explanation, is further borne out by the fact that some cases were tested many times by one laboratory, with the result that occasionally a case giving consistently positive results for ten, fifteen or more tests, would suddenly give a negative reaction, to be followed again

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1. The designations Laboratory A and Laboratory B are used throughout as this is not intended as an attempt to show relative merits of the two laboratories, but rather to indicate the value of the Wassermann test.

by a series of positive tests. It is possible, of course, that this may have been due at times to some change in the patient's serum, a condition which is not so very likely, and which, at any rate, is not explicable. Of especial interest in this work is a group of tests which we have made on children suspected of congenital syphilis, and who all fall into a class of poorly nourished and mentally retarded children. In this group, we found a series of reactions differing from one another somewhat as follows: doubtful, negative, positive, negative. We have never noticed this result in adults or in apparently healthy children. In these cases we have felt that the Wassermann reaction has not been of especial value in determining our diagnosis of congenital syphilis.

The tests are reported a little differently in the two laboratories. Laboratory A reports "positive, doubtful and negative," the positive test representing what is sometimes spoken of as a ++++ reaction, which is a strongly positive test in the three antigens used.

VARIATIONS IN THREE THOUSAND CASES

	No.	Per Cent.
Total number of variations, including those reported positive, moderately positive, or doubtful by one laboratory and negative by the other	197	6.56
Cases reported positive or doubtful by Laboratory A and negative by Laboratory B	70	2.33
Cases reported positive, moderately positive, or doubtful by Laboratory B and negative by Laboratory A	127	4.23
Cases reported moderately positive or doubtful by either laboratory and negative by the other laboratory	77	
Cases reported straight positive by either laboratory and negative by the other laboratory	120	4.0
Cases reported straight positive by Laboratory A and negative by Laboratory B	42	1.4
Cases reported straight positive by Laboratory B and negative by Laboratory A	78	2.6
Cases in variation group known to be syphilitic	35	
Cases in variation group known to be syphilitic reported positive by Laboratory A and negative by Laboratory B	20	
Cases in variation group known to be syphilitic reported positive by Labratory B and negative by Laboratory A	15	
Possible false positives (including positive and doubtful) from Laboratory A (70—20)	50	1.66
Possible false positives (including positive, moderately positive, and doubtful) from Laboratory B (127—15)	112	3.4
Considering only the 42 straight positives from Laboratory A and subtracting the 20 known to be syphilitic (these happened to give straight positive reactions) the possible false positives are	22	**0.73**
Considering only the 78 straight positives from Laboratory B and subtracting the number of these known to be syphilitic (5), the possible false positives are	73	**2.43**

The doubtful reaction is reported in those cases in which one or two of the antigens gave a strong inhibition of hemolysis, with complete or nearly complete hemolysis in the other one or two antigens. Laboratory B reports "positive" for the strongly positive reactions; "moderately positive" for the reactions not so markedly positive, and "doubtful" when there is not a complete uniformity in the reactions of the different antigens. In both laboratories, "negative" represents the condition interpreted as the absence of the test for syphilis.

The accompanying table summarizes the results obtained in these 3,000 cases. (Approximately 15 per cent. of the cases tested positive.)

It seemes only fair to state that a moderately positive or doubtful Wassermann reaction is not sufficient evidence on which to base a diagnosis of syphilis, unless backed by other strong points. It is always advised that in such a case the test be repeated until either a strongly positive or a definitely negative reaction is established. Hence, in considering the possibilities of going wrong in accepting the reactions of one laboratory, one would consider only the cases that are reported as straight positives. As the table indicates, the percentage variations between the two laboratories, considering the straight positives, is only 4, a percentage which we consider exceedingly low, and justifying the technic of these laboratories to a high degree.

If the possibility of making an erroneous diagnosis of syphilis, based on a positive reaction from but one laboratory, is considered, we see that this is reduced greatly, in that the percentage from the one laboratory is 1.4, and from the other, 2.6. This is stated on the assumption that when one laboratory gives a negative reaction and the other a positive, the positive does not represent syphilis. This is obviously not a correct hypothesis, as we have to deal with cases which are undoubtedly syphilis, but which give negative reactions in one laboratory, due either to the weakness of the the antigen, or to a technical error. We therefore went over the cases in which this discrepancy occurred, from the clinical standpoint, and considered only those cases in which very definite evidences of syphilis were obtained. This included cases in which the history was absolute, such as patients that had been known to have syphilis and had given a positive Wassermann reaction in the past and had been under treatment, or cases of syphilis of the central nervous system, in which the spinal fluid findings were positive. Many cases highly suggestive of syphilis, from the fact either that the patients were prostitutes or that they had had symptoms on which one would practically be justified in making a diagnosis of syphilis, were considered as not syphilitic, in order not to prejudice the conclusions in favor of the laboratory. Deducting the cases, then, that were undoubtedly syphilitic, we find that of the 3,000 cases tested, Laboratory A returned twenty-two positive reactions which were reported negative in the same cases by Laboratory B, and which did not give definite evidence of syphilis. This would make a possible "false positive" report (i. e., a positive reaction, due to an error in the performance of the test, on a nonsyphilitic serum) in only 0.73 per cent. From Laboratory B this percentage [2] was 2.43. These low percentages are undoubtedly higher than the facts justify, as there can be no doubt that some of these cases were syphilitic. However, if we accept these figures as the worst possible, they are still such that we can place a great deal of confidence in the reports of the laboratories. This study shows that it is possible to obtain "false negative" or "false positive" reactions. It should be emphasized strongly that these figures as given represent a discrepancy between the two laboratories on the first test. In the majority of cases, a uniformity of report was obtained on repetition.

While these figures are exceedingly low, and therefore very satisfactory, it is true that no matter how small the percentage of error may be, if it affects any given individual it is a 100 per cent. error for that individual, and therefore it is the duty of the clinician to protect him as far as is possible. This can be accomplished in a number of ways. Several repetitions of the test giving uniform results is very good evidence that the result as reported is correct. Secondly, having the blood tested by two laboratories simultaneously affords a good check. If there is a discrepancy, that is evidence that one or the other test may be an error, and a repetition of the test is indi-

2. The blood frequently did not reach Laboratory B for three or four days after being taken. There is evidence that blood which has stood for some time may give positive results in nonsyphilitic cases because of contamination.

cated. It should be emphasized that a knowledge of the laboratory and its standards, technic and method of reporting is more important in obtaining the information desired than the reports from a number of laboratories which may not be careful or accurate. In other words, it is the clinician's duty to know the possibility of error in the laboratory that he is using. It is much better to have a test repeated several times in a laboratory to whose technic one is accustomed than to have a single test made in several laboratories, which will only lead to confusion, especially when one remembers that the sensitivity of the antigens plays a considerable rôle.

It is true that occasionally on certain days things do not go entirely well in a laboratory, and it is found that one particular day may give a high percentage of positives. This affords a means of checking up the results, and is commonly used by the laboratory chiefs. Thus, it is usual to run known positive and known negative serums for this purpose. It is possible for the clinician to use a similar check on the laboratory. In hospital practice, in which a great number of tests are made each day, it is possible to draw a conclusion as to whether too high or too low a percentage of positives is received. For example, on a certain day, if we find that a number of cases in which there is no reason to suspect syphilis are reported as giving positive Wassermann reactions, we may be suspicious that something may have gone wrong in the laboratory. On the other hand, if our known syphilitics give negative reactions, this is also highly suggestive. Thus, the patient may be amply protected against incorrect reports, and the value of the Wassermann test greatly enchanced by the clinician himself.

A comparison of the results as shown in this study with results expected from other laboratory tests seems to us to be extremely satisfactory. The results would seem to be as good as one would expect from a Widal reaction, a Schick test, a diphtheria smear, or a single examination of the urine in a case in which nephritis is suspected. It is only fair to admit that we were somewhat surprised to find how well the tests of these two laboratories checked. Until we really added up the figures, our impression was that there were very many more variations. This was undoubtedly the result of the individual equation. Each instance in which there was a discrepancy stood out strongly and clearly, whereas those that agreed were passed over without any consideration whatsoever.

SUMMARY

The blood serums of 3,000 patients were subjected to the Wassermann tests by two independent laboratories. An analysis of the results showed that there was a complete uniformity in the findings of the two laboratories in 93.44 per cent. The 6.56 per cent. variation included cases reported as doubtful. Considering only the variation of cases reported positive by one laboratory and negative by the other, the percentage variation was 4. This was 1.4 per cent. positive in one laboratory and 2.6 per cent. positive by the other laboratory. Some of the cases reported positive by one laboratory and negative by the other were known to be syphilitic, so that the negative reaction was the incorrect one. Considering, then, the cases that either laboratory may have reported as positive in nonsyphilitic cases, the percentage was 3.16. This is probably a higher percentage for false positives than actually occurred, as some of these cases were presumably syphilitic. This percentage variation is based on only one test. Repetitions resulted in a uniformity of findings in the majority of cases. This is considered a good testimonial for the accuracy of the tests as performed in these two laboratories.

DUODENAL PERFORATION (FISTULA) TREATED BY DUODENAL (JEJUNAL) ALIMENTATION

ANOTHER CASE

MAX EINHORN, M.D.

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NEW YORK

About a year ago I reported a case of duodenal perforation successfully treated by jejunal alimentation.[1] As these cases are rare and of difficult management I take the liberty of reporting another case with duodenal fistula which I recently had under observation in conjunction with Dr. Willy Meyer.

REPORT OF CASE

History.—A. P. P., man, aged 50, born in the United States, seen, May 10, 1919, was first seized twenty years before with an attack of pain and gas in the epigastrium, which lasted several hours. Eight years later, he had three attacks in a period of three months. Five years later, the attacks came on more frequently and then disappeared until the past six or seven years, when they came on two or three times a year. The attacks were sudden, lasted at the utmost twenty-four hours, disappeared, and would not recur for a long period. During the attacks there was severe pain in the epigastrium, radiating across both sides of the abdomen. There had been no vomiting, but continuous belching of gas. The patient said that when he walked 2 or 3 miles the attack would disappear more readily than otherwise. The pain had no relation to food. The bowels were usually constipated. There was never any jaundice. During the attack the patient would lose 6 or 7 pounds, which, however, he would quickly regain. The chief complaints at the time of the examination were distress in the epigastrium, and constipation.

Physical Examination.—The only positive relevant finding was epigastric pain on deep pressure. The gastric contents were positive for hydrochloric acid; hydrochloric acid, 24; acidity, 54; blood, negative; there were numerous starch granules, a few leukocytes, bile, mucus and epithelial cells. The duodenal contents were greenish yellow and very turbid; alkalinity, 30; amylopsin, 5; steapsin, 2; trypsin, 4; there were cholesterin crystals, calcium bilirubin crystals and bacteria. Bacteriologic examination yielded colon bacillus and staphylococcus. The duodenal bucket revealed bile stain, 53-63; no blood stain. Contents from duodenal bucket: amylopsin, 0; steapsin, 0; trypsin, 0; hydrochloric acid ±. The white blood count was 9,800; polymorphonuclears, 61 per cent.; lymphocytes, 39 per cent.; hemoglobin, 80 per cent. Roentgen examination was negative with regard to the gastro-intestinal tract and the gallbladder. The Wassermann test was negative. In the urine, albumin varied from negative to a trace; there were a few red blood cells and a few white blood cells; sugar was negative. The systolic blood pressure was 115; diastolic, 74. The feces was negative for blood; mucus was present; there were no ova.

Based on the findings of the duodenal contents, very turbid bile in the fasting condition, and the history, a diagnosis of cholecystitis with probable gallstones was made, and an operation advised.

1. Einhorn, Max: A Case of Duodenal Perforation Successfully Treated by Duodenal (Jejunal) Alimentation, Med. Rec. **94**: 927 (Nov. 30) 1918.

Operation and Result.—Dr. Willy Meyer, May 26, performed a cholecystectomy. The gallbladder was found filled with stones. The pathologic diagnosis was chronic catarrhal cholecystitis. The patient was discharged from the hospital, July 12. Three weeks after the operation, the last tampon was removed. After that, bubbles of air came from the upper angle of the wound. Then a persistent discharge developed from this part of the wound. Frequently a great many bubbles of gas would come up from the same source and annoy the patient greatly. He was first seen by me with this discharge, October 11. The discharge was examined and found to contain food, was alkaline, and looked rather grayish.

EXAMINATIONS OF DUODENAL CONTENTS AS OBTAINED FROM THE FISTULA AND THROUGH THE DUODENAL TUBE

Date	Reaction	Amylopsin	Steapsin	Trypsin	Comment
		Discharge from the Fistula			
10/11/19	Alkaline	2	0	0	Food present; many pus corpuscles; few red blood cells
10/15/19	Alkaline	—	—	—	Direct smear; white blood cells; milk; red blood cells; mucus
10/26/19	Alkaline	—	—	—	No food; pus corpuscles; few red blood cells
		Duodenal Contents Obtained Through the Tube			
10/21/19	Alkaline	5	2	1	Yellow; slightly turbid; mucus; pus corpuscles
10/24/19	25	9	1	3	Golden-yellow; mucus
10/25/19	20	9	1	3	Yellow, bile-stained cells; white blood cells; goblet cells
10/25/19	25	6	1	2	Here the duodenal contents were yellow, brown and turbid

The accompanying table shows the result of examination of the fistula discharge as contrasted with the duodenal contents proper obtained through the tube.

The discharge being slightly alkaline, containing food, and hardly any traces of bile, the diagnosis of a duodenal fistula in the ascending portion of the duodenum, probably not very far from the pylorus, was made. The patient was then given duodenal (jejunal) feeding. A duodenal tube (44 inches long) was inserted, October 15. Duodenal feeding was started, October 17.

October 22, a roentgen examination was made by William H. Stewart. The tube, inserted through the fistula, entered the duodenum and ran parallel with the duodenal tube.

October 27, the tube, being clogged, was removed, cleaned and reinserted. It was left in place until November 19; another tube was introduced, November 23.

December 4, the wound closed by itself; the tube was removed.

December 12, the patient was discharged from the hospital.

December 22, I saw the patient. The wound had healed perfectly, and the patient had gained in weight and strength.

COMMENT

The diagnosis of a duodenal fistula situated between the pylorus and the papilla of Vater was established by the character of material oozing from the fistula. It was of alkaline reaction and contained food particles and usually no bile. As the patient had enough acid in his stomach the fistula must have come from the duodenum. The frequent absence of bile in it demonstrated that the opening must be situated above the papilla of Vater. This conclusion appears to find corroboration in the roentgen-ray examination and also in the clinical syndrome of the case.

The roentgen ray shows the catheter inserted into the fistula, meeting the duodenal tube a short distance from the pylorus.

Among the symptoms the patient presented from the fistula, the intense inflammation of the skin around the duodenal fistula usually encountered was missing here, the skin preserving its natural color. This must be explained by the fact that the secretion did not contain pancreatic juice, as is in fact seen from the examinations of the fistulous material given in the table. The lack of pancreatic juice likewise speaks for the location of the fistula above the papilla of Vater.

The treatment consisted of atropin in conjunction with the jejunal alimentation. The patient first lost considerable weight (20 pounds). After three weeks of jejunal alimentation, the tube was pulled up to some extent so that the capsule end was now situated in the duodenum proper. We now had real duodenal alimentation, which agreed with the patient much better, as he did not lose any more in weight.

A short while after the jejunal alimentation had been begun there was no food found in the secretion from the fistula, although some pus corpuscles and a few red blood corpuscles were always encountered. A little while later, December 4, the opening closed up by itself and has remained closed ever since. The patient is now enjoying perfect health. He eats and drinks anything he chooses, without any discomfort. He has regained his lost weight, and there is no trace of the fistula left, excepting the visible scar on the abdomen.

The healing of the fistula by duodenal alimentation, in the case described and in the one reported a year ago, shows that we have in the duodenal tube, and the method of feeding through it, an important aid to overcome this very tedious and what was formerly thought to be an almost intractable condition.

20 East Sixty-Third Street.

GUMMA OF THE BREAST

REPORT OF A PROBABLE CASE

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HOT SPRINGS, ARK.

The paucity of references, particularly by American writers, to the subject of syphilis of the breast makes this report and a review of the subject at this time desirable.

REPORT OF CASE

History.—Mrs. W. E. S., aged 33, housewife, came to me, Oct. 27, 1919, complaining of "nervousness" at times, pains in the arms and neck, frequent headache and a lump in the breast. An older sister was operated on for cancer at 36. The mother was living and well at 65. The father died following an injury. Five brothers and sisters were living and well. The patient had had appendicitis nine or ten years before, followed by several attacks. After the lapse of eighteen months, the appendix was removed. She had had measles as a child. She had been married twelve years and had had a miscarriage at seven months during the first year, and a second miscarriage at two months during the second year. I treated the husband for syphilis during the early spring of 1917. He had suffered from this disease for three years before marriage, but was assured by his family physician that he was cured. The patient never showed any outward manifestations of the disease, had enjoyed quite good health all her married life, and at the time I treated her husband, her blood Wassermann reaction was negative. About January, 1918, she began to notice pains and nervous twitchings in the neck, arms and legs. These were never severe. The lump in the breast was noticed in November, 1918, at which time it was about the size of a walnut. It gradually became larger, and during the summer of 1919 she was examined by a surgeon and had a Wassermann test made. This was reported as weakly positive. A short time

before coming to me she was examined by another physician, at which time her blood Wassermann reaction was strongly positive, and in spite of this he advised her to have an operation at once. This she refused, and came to me for treatment.

Examination.—The external genitals were negative. The superficial lymphatic glands were not palpable. The skin and mucous membranes were negative. An examination of the bones revealed a slightly tender spot on the sternum. The heart, lungs and abdomen were negative. The systolic blood pressure was 110; diastolic, 80. The eyegrounds were negative. The pupils reacted to light and accommodation. The left knee jerk was quite sluggish; otherwise the neurologic examination was negative. An examination of the left breast revealed a tumor of horseshoe shape, about 4 inches long and from 1 to 1½ inches in diameter, in the lower left quadrant of the breast. This was not tender, and the axillary glands on the left side were not enlarged. The blood Wassermann test by the classical method, with cholesterinized antigen, was + + +; in the ice-box and by the Thompson modification, + + + +. A diagnosis of gumma of the breast was made and the patient placed on treatment.

Treatment and Course.—Mercuric benzoate was administered intramuscularly in doses of 0.02 gm. daily. Potassium iodid was given by mouth, 10 drops three times a day, increasing 5 drops daily until 100 drops three times a day were reached. Neo-arsphenamin in 0.6 gm. doses was administered at weekly intervals for six weeks. At the end of this time, Dec. 8, 1919, the tumor had decreased in size until it was about one fourth of its original dimensions, when the patient was forced to leave for her home, but promised to return for further treatment if the tumor began to increase in size. About six weeks after leaving Hot Springs the patient began taking "mixed treatment," which was continued more or less regularly till Feb. 26, 1920, when I again saw her during a visit to her home city. At this time the tumor had become considerably smaller and had divided into two parts, one being about the size of a walnut and the other one about half that size.

In view of the history of syphilis in the husband, the two miscarriages, the positive Wassermann test and the result of the therapy, there seems to be no doubt that this case was one of gumma of the breast.

HISTORICAL

Most writers on the subject of breast syphilis state that Sauvages,[1] in 1768, was the first to recognize this condition. However, Astruc,[2] as early as 1736, speaks of cancer of the breast as one of the symptoms of syphilis peculiar to women, but does not mention any specific instances. Sauvages' case undoubtedly was one of gumma of the breast. An unmarried woman of 30, who had contracted syphilis ten years before, presented a hard and knobby tumor in each breast, the the size of a hen's egg, both of which were painful. There were also present small ulcerations in the mouth and the vagina. All symptoms of lesions cleared up in six weeks under mercury, and never recurred.

The leading syphilographers who followed Astruc in the latter part of the eighteenth and the early part of the nineteenth centuries, notably Hunter,[3] Bell,[4] and Swediaur,[5] do not mention syphilis of the breast; but about the middle of the nineteenth century gummas of the mammae began to be recognized, and cases were reported by Yvaren,[6] Verneuil,[7] Richet,[8] Velpeau,[9] Lancereaux[10] and others. The latter author, in his Traité de la syphilis, published in 1867, gives a very good description of the condition and mentions five or six cases which had been reported. Since that time, reports of less than forty cases have appeared, and these mainly in the French and German literature.

PATHOLOGY

The only description of the pathology of syphilis of the breast which I have been able to find is that of Reinecke,[11] who described a case of syphilitic mastitis. The patient was a woman of 37, who died from uremic coma. The kidneys and spleen were extensively amyloid, and the liver the site of gummas and deep scars. The upper half of the breast was very hard, the tissue on the cut surface dry, while numerous red or yellowish-red, circumscribed foci, the size of a pinhead or larger, projected above the cut surface. These red, firm nodules were found to be due to proliferation of the interlobular and intralobular connective tissue, with degeneration and destruction of the glandular cells whose place was being taken up by connective tissue. The vessels, especially the arteries, were markedly thickened. While this description is not that of gumma, in the strictest sense, the nodules may be considered as small gummas, and there is no reason to believe that larger gummas of the breast would show any essentially different histopathology than similar lesions of other regions.

CLINICAL HISTORY

While gummas of the breast are more common in women (about three fourths of the reported cases occurring in that sex), they are sometimes seen in men. One or both breasts may be affected, and the tumors may be single or multiple, varying in size from a pea to an orange, or larger. They may be subcutaneous or intraparenchymatous. They may occur in any portion of the breast, and usually appear as hard, well circumscribed, movable tumors, which slowly increase in size. As a rule there is no pain, but in a few cases this has been a rather marked symptom. This was true in one of Bissell's[12] cases, in which the pain was sharp and always occurred at night. Sometimes, while there is no pain, the tumor is exceedingly tender on pressure. Usually there is no involvement of the lympathic glands of the axilla, but this has been reported in some cases.

If untreated, these tumors go on to softening ulceration and sloughing. The ulcerations present the typical punched-out appearance of ulcerating gummas of other regions, with more or less infiltration of the borders. When sloughing occurs the lesion is most foul smelling and filled with a grumous, brownish fluid. A most remarkable case of this kind was reported by Bryant,[13] in which the entire breast sloughed out and left a clear, granulating surface. Actual gangrene also has been noted, as in Robinson's[14] case.

Usually the tumors are not adherent to the overlying skin, and they are freely movable. As a rule, also, the nipples are not retracted, but this does sometimes occur, as in the case of Gay.[15]

1. Sauvages: Nosologia Methodica, Amsterdam **1**: 149, 1768.
2. Astruc: De morbis venereis, Libri sex, Paris, 1736, p. 296.
3. Hunter: A Treatise on the Venereal Diseases, Philadelphia, 1791.
4. Bell: Treatise on Gonorrhea Virulenta and Lues Venerea, London, 1796.
5. Swediaur: Traité des maladies syphilitiques, Paris, 1801.
6. Yvaren: Des métamorphoses de la syphilis, Paris, 1854, p. 435.
7. Verneuil: Bull. Soc. anat. de Par. **30**: 96, 1856.
8. Richet: Traité d'anatomie chirurgicale, Paris, 1857, p. 513.
9. Velpeau: Traité des maladies du sein, Paris, 1860, p. 534.
10. Lancereaux: Traité de la syphilis, Paris, 1867, p. 180.
11. Reinecke: Centralbl. f. allg. Path. u. path. Anat. **10**: 316, 1899.
12. Bissell: Syphilitic Tumors of the Breast, Med. Rec. **72**: 14, 1907.
13. Bryant: Diseases of the Breast, London, 1887, p. 72.
14. Robinson: Case of Syphilitic Gangrene of the Breasts, Med. Times & Gaz., London **2**: 261, 1864.
15. Gay: Syphilitic Mammary Disease, Report of a Case of Inherited Syphilis, Removal of Mammary Tumors by Thomas Method, After Treatment by the Iodides, Med. Rec. **24**: 91, 1883.

Gummas of the breast may also affect congenital syphilitics, and cases have been reported by Gay,[15] Gromo,[16] Neumann [17] and others.

The breast may also be the seat of gummas which have extended from gummatous lesions of the skin over the breast, or from gummatous lesions of the underlying ribs.

DIAGNOSIS

Any tumor of the breast should be looked on with suspicion, and careful anamnesis and examination for other evidences of syphilis, including the Wassermann reaction, should be made.

In women, the history is not of so much importance, as quite frequently women are not aware of a syphilitic infection, although a history of miscarriage would be at least suggestive. Too much reliance also is not to be placed on a negative history in men, as for various reasons the history may be given incorrectly.

Of course, the differential diagnosis of any breast tumor can be made by microscopic examination of a section; but it is unwise to perform a biopsy for such an examination unless preparation is made to perform at the same time a radical operation for carcinoma if the tumor is found to be such.

Gumma of the breast is to be differentiated from chancre, absess, benign tumor, carcinoma, sarcoma, tuberculosis, actinomycosis and sporotrichosis.

Gumma of the breast sometimes markedly resembles chancre and has been mistaken for this condition. However, as a rule, spirochetes can be demonstrated in chancre, while they are very hard to find in gumma, and the axillary lymph glands are more frequently enlarged. If the chancre is seen early, the Wassermann reaction will be negative, but later will become positive, while with gumma it may or may not be positive.

Abscess of the breast will present more pain than gumma, will fluctuate, and on aspiration, pus will be found.

Benign tumors may be most difficult of differentiation, as they never cause enlargement of the axillary lymph glands. The Wassermann reaction, however, is negative.

Carcinoma of the breast, as a rule, occurs later in life than does gumma. The process of ulceration is slower, the involvement of axillary glands more frequent and occurs earlier, while carcinoma is usually more painful than gumma.

Sarcoma of the breast is very rare; but the differentiation from gumma may be most difficult, and recourse to laboratory aid may be necessary.

In tuberculosis of the breast, the auxillary glands are virtually always enlarged. Sinuses and fistulas are usually formed by the gradual extension of the process to the surface, while an examination of the discharge, as a rule, will show tubercle bacilli.

Actinomycosis of the breast is rare, and is to be differentiated from gumma by the finding of ray-fungus in the pus of the discharge.

Sporotrichosis of the breast is more rare, and its differentiation can be accomplished by the finding of the causative organisms.

Finally, in the diagnosis of gumma of the breast, it may be necessary to apply the therapeutic test. This is particularly true in the presence of a positive history or other clinical evidence of syphilis, or a positive Wassermann test.

16. Gromo: Contribution à l'étude des gommes du sein, Paris, 1878.
17. Neumann: Ueber die syphilitische Erkrankung der Brustdrüse, Allg. Wien. med. Ztg. **34**: 593, 1889.

PROGNOSIS

The prognosis of gumma of the breast in the main may be said to be good, though the prognosis for complete disappearance of the lesions depends on the recognition of the condition before ulceration has taken place. If the latter has occrred, while the lesions may, and usually do, heal under medication for syphilis there may be more or less scarring and, if the destruction of tissue has been great, considerable deformity.

TREATMENT

The treatment of gumma of the breast is the treatment of syphilis. It includes arsphenamin, mercury and iodids in some form or other. Sodium iodid intravenously in doses from 1 to 2 gm. and larger is to be highly recommended when large doses of potassium iodid by mouth are not well borne. In ulcerating lesions, local application of some powder, such as calomel and bismuth, equal parts, boric acid, acetanilid and calomel, equal parts, or aristol (thymol iodid) is highly beneficial.

It goes without saying that general hygienic measures should be instituted in gumma of the breast as in other types of syphilis.

Thompson Building.

LARYNGEAL CRISIS WITH AN UNUSUAL COMPLICATION

REPORT OF CASE

LEWIS T. GREGORY, M.D.

EVANSTON, ILL.

History.—Mrs. G. (27804), American, white, aged 39, widow, laundress, admitted as a suspicious case of tuberculous laryngitis to the Isolation Department of the Evanston Hospital, on the service of Dr. S. V. Balderston, complained of sudden attacks of difficulty in breathing; "tightness" in chest; hacking cough and hoarseness. She had not been well since an attack of influenza in the preceding fall. The present trouble dated back only about one month, when the patient developed a "cold" in the head, but paid little attention to it, as she was bothered with chronic catarrh. Four days before admission, the patient had a sudden attack of difficulty in breathing, which passed off in a few minutes. These paroxysms became more frequent and of greater severity. She had eight attacks during the first forty-eight hours after admission to the hospital, and about an equal number at home before coming to the hospital. She was unable to describe the "tightness" in her chest, but stated that the sensation was noticed only during the paroxysm. The cough was a more or less continuous hacking cough, and the hoarseness had become progressively worse until the patient was scarcely able to speak above a whisper. The patient had had the illnesses of childhood; "chronic rheumatism," chiefly in the legs, and worse at night; an abdominal disturbance leading to the removal of an ovarian cyst and the appendix four years before; sore throat several years before, which resisted treatment for a long time, and influenza last fall. The family and menstrual histories were negative. The patient had never been pregnant, and denied venereal infection. Her appetite was good, she slept fairly well, and there was no gastro-intestinal, pulmonary, cardiovascular or genito-urinary trouble not already mentioned.

Physical Examination.—The patient was well developed; she was somewhat hoarse, and occasionally gave a dry hacking cough. The temperature was 98 F., the pulse rate 88, and respiration 24. There was a large perforation of the nasal septum. The patient stated that she had had several operations on the nose for catarrh. Very slight symmetrical

edema of the vocal cords was found. There were many small atrophic scars all over the chest and back. The patient said that these came from "pimples" that she had had several years previously. There were marked tenderness and slight roughening over the tibia of both legs. Examination of the throat, mouth, neck, lungs, heart and abdomen, and of the urine and blood yielded negative results. The neurologic examination was negative except for a slightly sluggish reaction of the pupil to light.

Treatment and Course.—Syphilis was suspected, and a Wassermann test was ordered. Before the report from the laboratory was received from this, a report of the nose and throat cultures (taken as a routine on admission) was positive for diphtheria. Ten thousand units of antitoxin were given.

As mentioned in the foregoing, during the first forty-eight hours after admission she had eight paroxysms of difficult breathing. I saw her in three of these. She would suddenly become very hoarse, and within a few seconds would have air hunger, which became progressively severe, until respiration was almost impossible, and the lips and face became markedly cyanosed. Before a hypodermic injection of atropin could be administered, the paroxysm was over. The average duration of these paroxysms was about three minutes. Between attacks she felt perfectly comfortable except for the slight cough and hoarseness.

On the third day, the Wassermann report came back ++++ with fresh and inactivated serum and with two antigens. A diagnosis of syphilitic laryngeal crisis (laryngeal stroke of Charcot) was made, and antisyphilitic treatment was instituted. Neo-arsphenamin, 0.45 gm., was given intravenously, and daily mercury rubs were started. After the first injection, the hoarseness started to clear up, and she had no further paroxysms.

It was necessary to keep her in quarantine for twenty-seven days before diphtheria bacilli had disappeared from the throat and nose.

To date she has kept up the weekly intravenous injection and daily rub, and so far has had no return of any of the symptoms, and the tenderness over the tibia and the nightly pains in the legs have entirely disappeared.

SYPHILITIC LARYNGEAL LESIONS

Conner,[1] in 1903, reviewed the literature of syphilis of the larynx, and found that 128 cases had been reported. None of these, however, appear to be of a tabetic type, but were syphilitic lesions localized in the larynx proper.

Weinstein,[2] in 1916, reported a case more like the one reported above. The patient lost his voice, and a week passed before a diagnosis was made. Neo-arsphenamin was administered intravenously, and within five hours his power of speech had returned.

Kyle,[3] in 1918, gave a summary of the various syphilitic laryngeal lesions. He distinguished: (1) mucous patch; (2) thickening of the vocal cords; (3) paresis, variable from week to week; (4) gumma; (5) ulceration; (6) cicatricial changes, and (7) invasion of contiguous parts. He also stated that a primary syphilitic laryngeal lesion has not been reported, and that gumma is the most frequent type.

COMMENT

The case reported was apparently a syphilitic laryngeal paresis, corresponding to a gastric crisis, so frequently seen. It might have been an unusual type of diphtheritic paresis, but this is not likely, as there was no history of any diphtheritic process and no local evidence of diphtheria in an active form. Furthermore, it was a paresis, transient in type, and not a paralysis, as usually seen following diphtheria. Finally, the Wassermann reaction was strongly positive with other evidence of syphilis as seen in the sluggish pupil, perforated septum, scars on the back and chest, and painful and roughened tibia, with a history of chronic sore throat and nocturnal pains in the lower extremities. The immediate response to antisyphilitic treatment confirms the diagnosis. As the left recurrent laryngeal nerve hooks around the arch of the aorta, one interesting possible explanation of the paroxysm is that a beginning syphilitic aortitis at this point caused an irritation to that nerve.

Evanston Hospital.

1. Conner, L. A.: Syphilis of the Trachea and Bronchi, Am. J. M. Sc. **125**: 57 (July) 1903.
2. Weinstein, Joseph: Syphilis of the Larynx, New York M. J. **104**: 165 (July 22) 1916.
3. Kyle, J. J.: Syphilis of the Larynx, Am. J. Syphilis **2**: 727 (Oct.) 1918.

A METHOD OF TREATMENT FOR NEUROSYPHILIS*

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A criticism of the Swift-Ellis system of intraspinal therapy of neurosyphilis may be made because of the minute amounts of arsphenamin detectable as arsenic, carried over in serum secured by drawing blood one hour after the intravenous injection of arsphenamin. This objection is removed by the technic of Ogilvie, who adds arsphenamin, and by that of Marinesco, who adds neo-arsphenamin, to serum in vitro prior to intraspinal injection; but in both methods the patient may be deprived of the beneficial effects of the intravenous administration of these drugs, which probably constitutes a valuable part of the Swift-Ellis treatment. For more than a year, I have used a plan of combined treatment with mercurials and arsphenamin by which I believe that these objections are corrected. In addition, advantage is taken of the very probable value of spinal drainage treatment advocated by Dercum and Gilpin, which is based on the assumption that the rapid withdrawal of cerebrospinal fluid is followed by an increase in the vascularity of the cord, resulting in improved nutrition and facilitating the possible passage of arsphenamin or mercury in the blood to the tissues of the cord and brain and cerebrospinal fluid. Dercum and Gilpin thoroughly drain the subarachnoid space by spinal puncture immediately after the intravenous injection of arsphenamin or during mercurial treatment, but do not inject anything intraspinally; spinal drainage alone has been reported by them as yielding beneficial results.

PLAN OF TREATMENT

Due care is taken to exclude all cases of probable brain tumor:

1. A "course" of treatment covers four weeks; during this period, twenty-four inunctions of mercury, 360 grains of potassium iodid and four combined intravenous and subdural injections of arsphenamin are given, followed by an intermission. Treatment begins with daily inunctions of mercury for one week and the oral administration of 5 grains of potassium iodid three times a day. At the end of this week the first intravenous and subdural injections of arsphenamin are given, and they are repeated at intervals of a week until four have been administered. Mercurial inunctions and potassium iodid are given throughout, excepting on the days when arsphenamin is administered.

* From the Dermatological Research Laboratories.

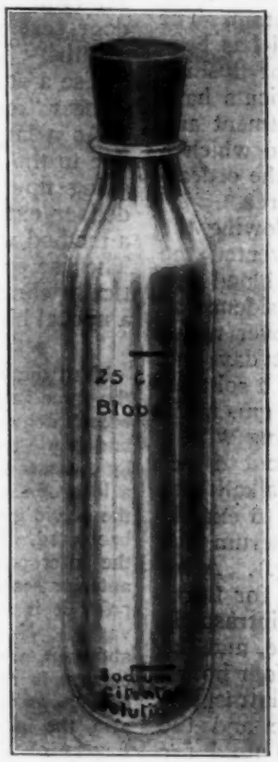
The urine is examined at least once a week for evidences of renal irritation. If intolerance to mercury or iodid or both develops, the doses are reduced or the administrations are given every other day.

2. On the day when the intravenous and subdural injections of arsphenamin are given, the patient is put to bed at noon and lunch is omitted; light supper is generally permitted, and additional refreshment is given at 9 p. m. if food is desired. If the patient is constipated, a mild cathartic is given the day before to insure an evacuation of the bowels during the morning hours.

3. Six-tenths gm. of arsphenamin is dissolved in 150 c.c. of sterile physiologic sodium chlorid solution prepared of freshly distilled water [1] and a 15 per cent. solution of sodium hydroxid is added until the solution is just completely cleared, the amount of alkali being measured as drops or one-tenth cubic centimeters; after complete neutralization (clearing), three or four drops more of the alkali are added to the solution. *Sterile saline solution is now added to bring the total volume to exactly 200 c.c.;* each cubic centimeter of the solution contains, therefore, 0.003 gm. of arsphenamin, and 1 c.c. is removed to a sterile test tube to be used about one hour later in dose of 0.1 c.c. (0.0003 gm.) for arsphenamizing the serum in vitro.

4. The solution of arsphenamin is now administered by intravenous injection, the dose being approximately 0.6 gm., well diluted.

5. *Immediately after the intravenous injection,* 25 c.c. of blood are removed from a vein of the opposite arm with a sterile record or Luer syringe and expelled into a sterile 50 c.c. centrifuge tube fitting the international centrifuge. The tube has a narrow neck facilitating the use of a sterile rubber stopper, as shown in the illustration, and carries 4 c.c. of a sterile 10 per cent. solution of sodium citrate in physiologic sodium chlorid solution to prevent coagulation of the blood.



Centrifuge tube for the aseptic collection of plasma and serum.

6. The blood is at once gently mixed with the citrate to prevent coagulation, and immediately centrifuged at high speed for at least twenty minutes, 10 or 12 c.c. of the clear plasma being pipetted aseptically to a sterile test tube. Sodium citrate may be omitted and the coagulum of blood gently broken up with a sterile glass rod before centrifuging, but from ten to fifteen minutes are required for coagulation before breaking up the clot, and the resulting serum is usually tinged with hemoglobin; the latter, however, is not harmful.

7. *One-tenth c.c. of the solution of arsphenamin* held in readiness is now added to the plasma or serum and thoroughly mixed; the dose is 0.0003 gm. (⅓ mg.), which is safe for the first injection. Subsequently the dose may be increased to 0.2 c.c. (0.0006 gm.) and occasionally to 0.3 c.c. (0.0009 gm.); I have never given a larger amount.

8. The arsphenamized serum is placed in a water bath at 56 c. (132.8 F.) for thirty minutes.

9. Spinal puncture is now performed in an aseptic manner in the lateral posture with a gage No. 19 Babcock needle; the diameter of this needle is about 1 mm., which insures a slow rather than rapid flow of spinal fluid and consequently a gradual drop in cerebrospinal fluid pressure, and the needle fits the record syringe. Preliminary to puncture in the third or fourth lumbar interspace, the skin and subcutaneous tissues are infiltrated with about 1 c.c. of sterile 1 per cent. procain by means of a No. 26 needle, which renders spinal puncture almost painless. Spinal fluid is allowed to flow until about 30 c.c. are secured; at this time, the flow is usually quite slow, many seconds being required for the formation of a single drop. The warm arsphenamized serum (usually from 10 to 12 c.c.) is now slowly injected by gravity or with a record syringe. As a general rule the *slow* injection of 12 c.c. of serum under these conditions is almost painless. Each specimen of spinal fluid is submitted for total cell count (fresh fluid being used), protein determinations, and Wassermann and colloidal gold tests.

10. The foot of the bed is elevated and the patient requested to lie on his back for several hours and to stay in bed until the following day. In every instance but one the patient has been able to leave the hospital the following morning, feeling no ill effects, except the soreness resulting from the needle punctures.

The time required for the operative procedures is about two hours, thus distributed:

(*a*) About thirty minutes for the intravenous injection of arsphenamin and the withdrawal of blood.

(*b*) About one hour to secure and arsphenamize the serum.

(*c*) About one-half hour to conduct spinal puncture, drain the canal, and inject the arsphenamized serum.

The 1 c.c. of solution of arsphenamin carried over in a sterile test tube for arsphenamizing the serum may be used for this purpose with safety any time within three hours of its preparation.

ADVANTAGES

The advantages of this method may be thus summarized:

1. The patient receives arsphenamin both intravenously and intraspinally.

2. Blood is removed at once, insuring in the serum a larger amount of arsphenamin than is secured after an interval of an hour, as in the Swift-Ellis method.

3. Plasma or serum is secured at once, rendering the complete treatment possible within two or three hours instead of an interval of over night between the intravenous and intraspinal treatments.

4. The removal of from 20 to 30 c.c. of cerebrospinal fluid, followed by the injection of but 10 to 12 c.c. of arsphenamized serum, very probably leaves cerebro-

1. Kolmer, J. A., and Yagle, E. M.: Hemolytic Activity of Solutions of Arsphenamin and Neo-Arsphenamin (J. A. M. A. **74**: 643 [March 6] 1920). The use of sterile physiologic sodium chlorid solution instead of water, and the addition of only a slight excess of alkali over that required for complete clearing of the solution instead of one third excess, reduce the hemolytic activity of the solution, which is probably a factor of importance in the intravenous injection of 200 c.c.

spinal fluid pressure reduced for some time, producing increased vascularity of the cord and probably also of the brain, with the beneficial effects ascribed alone to spinal drainage. Indeed, injection of arsphenamized serum within an hour of the intravenous injection may increase extravasation from the meningeal vessels by reason of irritation produced by the serum and arsphenamin in the subarachnoid space, in addition to the increased vascularity and transudation ascribed to reduction alone of cerebrospinal fluid pressure.

5. The patient receives the benefit of treatment with mercury and iodids and of spinal drainage conducted while under the influence of these antisyphilitic medicinals.

CONTRAINDICATION TO THE METHOD

The disadvantage of the method (encountered once in my experience) is the inadvisability of giving the intraspinal treatment in the presence of a reaction following the intravenous injection of arsphenamin. The administration of arsphenamin as described has been only exceptionally followed by a reaction of flushing and chills, and with one exception the patients have expressed a desire for the intraspinal treatment and have enjoyed a good sleep and rest, toward which a psychic element due to the realization that the ordeals were over has contributed in no slight degree.

In the one case in which a reaction following the intravenous injection of arsphenamin prevented the intraspinal treatment, a second specimen of blood was drawn later in the afternoon after the subsidence of the reaction and placed in a refrigerator over night, followed by separation of the serum next day and arsphenamizing by the addition of 0.1 c.c. of a solution of arsphenamin prepared by dissolving 0.1 gm. in 30 c.c. of 0.8 per cent. salt solution, neutralizing with a normal solution of sodium hydroxid (about 4 per cent.) [2] adding two or three drops more of alkali, and then salt solution to bring the total volume to exactly 33 c.c.; 0.1 c.c. of this solution added to the serum represents 0.0003 gm. of arsphenamin (⅓ mg.). After heating the arsphenamized serum at 56 C. for thirty minutes, spinal puncture, drainage and intraspinal injection were conducted as described above, and the patient was kept in bed for another twenty-four hours, which I regard as a wise precaution after intraspinal treatment or even simple spinal puncture and the removal alone of 5 c.c. or more of spinal fluid for laboratory examinations.

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2. A normal solution of sodium hydroxid, or one of approximately 4 per cent. strength, is better than a 15 per cent. solution for the purpose of preparing solutions of small amounts of arsphenamin, as 0.1 gm.

Influenza in Alaska.—The annual report of the governor of Alaska shows that thousands died in an influenza epidemic through want of care. Influenza broke out early in October in practically all the coastal towns following the lines of steamer travel. Travel to the interior was stopped and so it escaped the outbreak. It is estimated that there have been 1,500 deaths, chiefly among the natives, on the Seward Peninsula and vicinity. There were over thirty deaths among the passengers on the last trip of the steamer *Victoria*. At Kodiak and on Cook Inlet the mortality was extremely high. Whole villages of Eskimos lost their entire adult population. Many infants were frozen in their dead mothers' arms. Medical relief was given where possible; destitution was relieved, and the orphan children gathered up and placed in institutions until appropriations should become available for their permanent care. The burial of dead natives alone cost approximately $20,000.—*U. S. Bull.*, Dec. 15, 1919.

AN ANALYSIS OF FIFTY-SIX CASES OF BREECH PRESENTATION

DESCRIPTION OF A METHOD OF DELIVERY IN WHICH MANUAL EXTRACTION OF EXTENDED ARMS IS RARELY NECESSARY

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These cases of breech delivery occurred at the Manhattan Maternity and Dispensary on the services of Drs. J. Clifton Edgar, Austin Flint and R. E. Brown, during my time as resident surgeon (June 3, 1915, to July 1, 1916).[1] In cases of fetal death, the necropsies were performed by Dr. L'Esperance of Cornell University.

A large number of the deliveries of the Manhattan Maternity and Dispensary are performed on the outdoor service, by interns whose service is only three months. Therefore an effort was made to find or devise a standard method of breech delivery that was as near "fool proof" as possible.

As a large part of the delay in breech delivery is due to the more or less common practice of manually going up past the head through the pelvic inlet to deliver extended arms, an attempt was made to find a method whereby this was seldom, if ever, called for. The use of the delivery described herewith has practically eliminated this necessity, except when there is a nuchal hitch.

METHOD OF DELIVERY

Until the breech delivers from the vulva, the procedure is the same as with any other breech delivery. As soon as the breech delivers, the child is covered with a warm, wet towel, and gentle traction is made downward and backward, assisted by pressure from above, until the umbilicus is delivered; then a loop of the cord is pulled down, the child is grasped about the pelvic girdle, and strong traction is made downward and backward. The bisacromial diameter of the body is kept in the anteroposterior diameter of the maternal pelvis until the anterior scapula is seen to slip under the symphysis; at this point it is very easy to deliver the anterior arm from the vagina. Now the child's body is lifted over the mother's abdomen, whereupon the posterior arm will slip out. The occiput is allowed to rotate under the symphysis, and the body to go with it. The child is placed along the right forearm, the index finger is put in the child's mouth, with the fingers of the left hand over the child's shoulders, care being taken not to fracture the clavicles, and moderate traction is made downward and backward until the mouth can be delivered by flexion upward. After the mouth is delivered, one should go slow unless there is some indication for speed.

Before the delivery is begun, the position of the child should be accurately made out so that there will be no danger of allowing the occiput to rotate posteriorly. This can be prevented by always delivering the anterior hip first and assisting the rotation of the occiput forward by rotating the body in the proper direction. In left sacral positions, the child's body should be rotated to the right and anteriorly. In right sacral positions, to the left and anteriorly.

Before any traction is made from below, an assistant makes firm pressure on the child from above; this pressure is continued until the child's mouth is delivered. It is made in such a manner that the head will remain flexed on the chest and the arms will not extend. This pressure is a very important part of the delivery.

The main points to remember are:

1. As soon as any traction is made, it should be made downward and as far backward as possible. To do this it is

1. The reason I did not complete this paper earlier is that I have been on active duty in the United States Naval Reserve Forces for two years.

always necessary to have the woman's hips on or just over the edge of the operating table, or, if done in a home, over the edge of a kitchen table. The delivery will be facilitated, especially the traction backward, if the legs of the woman are held by two assistants so that the thighs are slightly flexed on the abdomen and the legs on the thighs with the feet on a level with the buttocks, and not in the ordinary lithotomy position with the legs in stirrups. A breech delivery should never be performed in bed.

2. One should not go up after the extended arms, unless certain that there is a nuchal hitch, that is, an arm caught back of the occiput; for in all other positions the arms will squeeze through the pelvic inlet with sufficient traction from below.

3. Firm pressure should be maintained from above, applied in such a way as to keep the head flexed.

No originality is claimed for this method, but if it is used conscientiously, breech delivery will lose a great many of its terrors, and the fetal mortality will be decreased.

The method was used in nearly all of the cases here reported. Versions and multiple births are not included in this series.

The position was left sacro-anterior in thirty cases; left sacroposterior in one; right sacro-anterior in twenty-one, and right sacroposterior in four. As the majority of these patients lived in tenements, and so were not often seen early in labor, the number of sacroposterior positions reported is probably much too small.

REPORT OF STILLBIRTHS

In this series there were nine stillbirths.

CASE 1 (Breech L. S. A. 198). The fetus, born at the seventh month, was macerated and weighed 3 pounds.

Necropsy: The fetus was too decomposed for microscopic section.

CASE 2 (Breech L. S. A. 204). The mother, a quintipara, lived in a tenement house. When the intern arrived at the bedside, all the baby had been born but the head, and although this was very easily delivered it was too late, and the baby was dead.

Necropsy: The child was a large, normally developed boy. There were punctate hemorrhages in the thymus, lungs, liver and suprarenals, and fluid blood. The thymus was very large, almost double normal size. This may have been a predisposing factor in the cause of death.

Anatomic Diagnosis: Asphyxia in new-born; fluidity of blood; enlarged thymus.

CASE 3 (Breech R. S. A. 115). The fetus was a marked specimen of an encephalic monster that never breathed. The labor was very easy, lasting only one hour and fifty-five minutes.

CASE 4 (Breech L. S. A. 206). The mother was a primigravida. The membranes ruptured during the first stage. Labor lasted thirteen hours and forty minutes. The head stuck at the pelvic inlet for a full ten minutes. The heart was beating at birth, but the baby could not be resuscitated. The arms were flexed on the chest.

CASE 5 (Breech L. S. A. 209). The mother, aged 19, was a secundigravida. The membranes ruptured at the second stage of labor. The delivery was spontaneous after a labor lasting eight hours and forty-five minutes. The cord was around the baby's neck. The baby weighed 7 pounds and 8 ounces.

CASE 6 (Breech L. S. A. 211). The mother was a tertigravida. The two previous deliveries were instrumental. The baby weighed 11 pounds and 11 ounces. The patient was ten days overdue. The membranes ruptured two days before the onset of labor. Labor lasted seventeen hours and eighteen minutes. Delivery was very difficult. The arms were extended, gone up after, and manually extracted. The head was extracted with difficulty. This stillbirth was due to the excessive size of the child.

Necropsy: The baby was a very large boy with excessive development of fat and purplish discoloration of the entire skin. The liver was large and showed multiple hemorrhages. The spleen was large and congested. The suprarenals were entirely destroyed by hemorrhage, forming almost a hemorrhagic sac. The kidneys were deeply congested. The bases of both lungs showed hemorrhages. The remaining portions of the lungs showed some areas of emphysema, as if a pulmotor had been used. The thymus was large. The brain showed diffuse hemorrhage over its entire surface.

Anatomic Diagnosis: Asphyxia; overdevelopment.

CASE 7 (Breech L. S. A. 212). The mother was a quadrigravida with a generally contracted pelvis. The baby weighed 9 pounds and 11 ounces. The membranes ruptured early in the first stage. The arms were extended, gone up after, and manually extracted with great difficulty. Then the head stuck at the pelvic inlet for some time. In this case we had a large child and a small pelvis.

Necropsy: The body was that of a full term, well developed girl. The organs, especially the kidneys and the suprarenals, showed congestion. There were punctate hemorrhages in the lungs and the thymus. The heart was normal. The brain showed diffuse meningeal hemorrhages.

Anatomic Diagnosis: Cerebral hemorrhage; asphyxia.

CASE 8 (Breech L. S. A. 222). The mother had had ten previous labors. The delivery seemed very easy, but the baby could not be resuscitated. The membranes ruptured in the first stage. The labor lasted nine hours and forty minutes. The arms were extended, but caused no delay.

Necropsy: The child was a well developed girl. There were no skin lesions. The area of aeration in the lungs was small; the remaining portion was atelectatic. The bronchi were filled with thick, greenish, tenacious mucus. There were small punctate hemorrhages in the thymus. The other organs were apparently normal.

Anatomic Diagnosis: Asphyxia; mucous plugs in the bronchi.

CASE 9 (Breech L. S. A. 227). The labor occurred four weeks prematurely in a quintipara. The labor lasted four hours and fifteen minutes, and terminated spontaneously. The baby was born dead. It weighed 6 pounds and 12 ounces.

OTHER DATA

No babies that were born alive died while still under our care. There were fourteen primiparas and forty-two multiparas, the latter being thus divided: secundiparas, 9; tertiparas, 9; quadriparas, 6; quintiparas, 9; sextiparas, 2; septiparas, 2; octiparas, 2, and 1 nonipara, 1 decipara and 1 undecipara.

The ages of the mothers ranged from 18 to 44 years. The age did not seem to have any influence either on the frequency or on the ease of delivery.

The fetal heart sounds were mentioned as being heard fourteen times above the level of the umbilicus; at the level of the umbilicus, six times, and below the level of the umbilicus, twenty times. It was not heard seven times, and not mentioned nine times.

The living babies varied from 3 pounds and 8 ounces to 10 pounds. The stillborn babies' weights ranged from 3 pounds (a macerated premature baby) to 11 pounds and 11 ounces. The average weight for all cases was 7 pounds and 2 ounces; for the stillborn babies, 7 pounds and 12 ounces, and for babies born alive, 7 pounds.

No note was made of whether or not the arms were extended unless they gave trouble. They were manually extracted in two cases. (These were both described under stillbirths, Cases 6 and 7.) There is one case described in which there seems to have been a nuchal hitch:

The breech was born as usual up to the shoulders, the scapula appearing from under the symphysis before reaching for the anterior arm. This, the anterior (left), was extended

and lay behind the occiput. The posterior arm was delivered first in the usual manner, then the anterior flexed and pulled down.

The term "usual manner" means the delivery described above.

The after-coming head was mentioned as being delivered by the Smellie-Veit method in twenty-four cases. The delivery was recorded as spontaneous in twelve cases. No mention was made of the delivery of the head in twenty cases. No craniotomy was done on an after-coming head.

The forceps were never applied to either the head or the breech, although they were frequently held in readiness when we expected trouble. The only three cases in which the head stuck and forceps might have been of help occurred in tenements when forceps were not at hand. It might be a good rule always to have forceps ready before starting a breech delivery.

Chloroform was used in twenty-six cases, ether in one case. There was no anesthesia in nineteen cases. No mention was made as to any anesthesia being used in the remaining eleven cases. I myself prefer the patient well anesthetized for the actual delivery.

The longest labor in the series lasted thirty-three hours and fifteen minutes. This was in the case of a primipara, aged 23. The membranes ruptured one day before she went into labor. Finally, a breech extraction was done and she was torn through the sphincter ani. The shortest labor was two hours and fifteen minutes. This occurred in a tertipara. The baby weighed 5 pounds and 9 ounces. The average length of labor in the primigravidae was seventeen hours and four minutes. The average length of labor in the multigravidae was nine hours and eight minutes. From these figures it would seem that the length of labor was not much influenced by the presentation.

The time of rupture of membranes was: in the second stage of labor, seventeen cases; in the late first, ten cases; during the first stage, ten cases; at the onset of labor, one case, and before labor began, three cases, in one of these two days and in another one day, before labor began. The time of rupture was not mentioned in fifteen cases.

There were only two cases of definite prematurity. In both, the baby was born dead; one was macerated. One case was ten days past term. This baby was also born dead after a difficult labor.

Of lacerations of the perineum, in the primigravidae there were six first degree; two second degree, and one third degree; in the multigravidae, four first degree and one second degree. It seems to me that there were as few lacerations in this series as there would have been in a similar number of vertex deliveries, with the exception of the third degree laceration.

In these cases, deformity of the pelvis seemed to play little part, as only one woman is recorded as having any deformity, and she only a moderately generally contracted pelvis.

One baby was a monster; two had club feet; and one of these also had spina bifida. Aside from these, there were no marked abnormalities.

CONCLUSIONS

1. The most dangerous condition in breech delivery seems to be disproportion between the size of the child and the pelvis.

2. Deformities of the pelvis and child did not seem to play much part in determining the breech presentation.

3. Early rupture of the membranes is a serious happening.

4. Manual extraction of extended arms is seldom indicated. Manual extraction of the arms was used twice in this series, and in both cases the child was stillborn.

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DIGESTIBILITY OF STEAM-COOKED SOY BEANS AND PEANUTS *

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The unusual demand for foods, coupled with the high price of labor and fertilizer, makes it necessary that each acre of land devoted to food crops produce the maximum amount. From an agricultural standpoint the legumes are considered a profitable crop, since they enrich the soil with nitrogen while producing valuable food for man and beast. The legumes in general have long been important sources of food, and on account of their high protein content are sometimes referred to as the "poor man's beefsteak"; but two valuable kinds, soy beans and peanuts, have been relatively little used in this country in the human dietary.

Studies of the food value of soy beans and peanuts have supplied considerable data relative to their dietary importance. A comparison [1] of the composition of legumes in general with the composition of soy beans and peanuts shows that the latter are much richer in protein and fat, the expensive constituents of the diet, and accordingly from this standpoint are very valuable. For dietary purposes, however, the nature as well as the quantity of protein is of importance, since incomplete proteins cannot serve over long periods of time as the sole source of tissue-forming material.

Studies of the amino-acids from legume proteins made by Osborne and co-workers [2] and by Johns and Jones [3] have shown that those from the proteins of soy beans and peanuts are in kind and proportion such as are believed to be essential to normal development. Such was not the case with the other legume proteins studied.

This belief is confirmed by biologic studies. McCollum, Simmonds, and Pitz,[4] in discussing the effects of feeding laboratory animals on a diet rich in navy beans, say: "We feel safe in saying that this legume should under no circumstances form a principal part of any relatively monotonous diet." McCollum and Simmonds [5] conclude that "the protein mixture from maize 80 and navy beans 20 per cent. has just about one-half the biological value for growth that the total protein mixture in milk possesses." Daniels and Nichols [6]

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* Prepared under the direction of C. F. Langworthy, Chief, Office of Home Economics, Department of Agriculture, Washington D. C.

1. Bull. 28, U. S. Dept. Agr., Office Exper. Sta., 1899, pp. 65-75. Farmers' Bull. 121, U. S. Dept. Agr., 1916, p. 17. Bull. 717, U. S. Dept. Agr., 1918, p. 5.
2. Osborne, T. B., and Co-Workers: Am. J. Physiol. **18**: 307, 1907; ibid. **19**: 468-474, 1907; ibid. **22**: 368, 1908; ibid. **22**: 424, 1908; J. Biol. Chem. **5**: 198, 1908.
3. Johns, C. O., and Jones, D. B.: J. Biol. Chem. **28**: 77, 1916; ibid. **30**: 33, 1917.
4. McCollum, E. V.; Simmonds, N., and Pitz, W.: J. Biol. Chem. **29**: 521-536 (April) 1917.
5. McCollum, E. V., and Simmonds, N.: J. Biol. Chem. **32**: 35 (Oct.) 1917.
6. Daniels, A. L., and Nichols, N. B.: J. Biol. Chem. **32**: 95 (Oct.) 1917.

find that "the protein of the soy bean appears to be quite as valuable as the casein of milk." Osborne and Mendel,[7] in discussing the use of soy beans as food, state that "the proteins of the soy bean, unlike those of the other leguminous seeds thus far investigated, are adequate for promoting normal growth." Referring to reproduction of laboratory animals restricted to soy beans as a source of protein, these investigators[8] say: "On diets containing either the soy-bean meal or the commercial soy-bean meal, together with fats and 'protein-free milk' or our 'artificial' salt mixture, several broods of vigorous young have been produced, and these young have grown normally on diets the same as those on which their parents were raised. This is a further demonstration of the nutritive efficiency of this legume, in striking contrast with the adverse results obtained with kidney beans and garden peas." Daniels and Loughlin,[9] in discussing feeding experiments with peanuts, report: "Good growth was secured also with a ration supplying 15 per cent. protein from the peanut meal. The proteins of peanuts are comparable to those of the soy bean, since it has been shown that both legumes supply the essential amino-acids in sufficient amounts for normal growth and reproduction."

Owing to the convincing results of a large number of carefully controlled metabolism studies with laboratory animals, students of nutrition are agreed that in order to maintain the well-being of the body through the processes of growth, maintenance and reproduction it is necessary that the diet supply in addition to an adequate amount of protein, fat, carbohydrate, and mineral matter, three as yet unidentified food accessories, which have been designated fat-soluble A, water-soluble B, and water-soluble C. In a number of the studies referred to already and in reports of others,[10] the value of legumes as sources of these accessories or vitamins is reported. Fat-soluble A is nearly, if not entirely, lacking in all legumes thus far reported on with the single exception of the soy bean. Water-soluble B is found in satisfactory amounts in all thus far investigated. Water-soluble C appears to be lacking in the dried seeds of all the legumes studied, but to be abundant during the sprouting state. Whenever present, it appears to lose its dietary efficiency when cooked at a temperature and under pressures such as were used in the experiments described in the present paper.

Studies of the digestibility of legume proteins have been made by Rubner,[11] Malfatti,[12] Prausnitz,[13] Snyder,[14] Richter,[15] Woods and Mansfield,[16] and Wait,[17] and the general conclusion to be drawn from the experimental data obtained by these investigators is that while the legume proteins are fairly well utilized by the human body, comparing favorably in this respect with the cereal proteins, they are not so completely utilized as the animal proteins supplied by meats, eggs and milk. Few studies have been made of the digestibility of proteins present in soy beans and peanuts. Oshima[18] reports three experiments in which the average digestibility of the total protein of a diet of tofu (soy-bean curd) and rice, of which 83 per cent. was soy-bean protein, was 95 per cent. Mendel and Fine[19] found the digestibility of soy-bean protein to be 85.3 per cent., as compared with 77.9 per cent. for that of the navy bean. Lyman and Bowers[20] have also studied the digestibility of soy-bean meal and report two digestion experiments with bread made with soy-bean meal in which the digestibility of the protein averaged 91.1 per cent. No data were found in the literature consulted regarding the digestibility of peanut protein.

During the period of unprecedented demand for foods occasioned by the recent war, it appeared to me that soy-bean and peanut press cakes could well be utilized for food purposes, especially the cakes that resulted from "cold pressing" sound soy beans and peanuts. Accordingly, experiments were conducted in the Office of Home Economics Laboratory of the Department of Agriculture to determine the digestibility of the proteins supplied by these legumes when the press-cake flours were blended with wheat flours and served in the form of an unleavened bread. Seven experiments with soy-bean flour and eleven with peanut flour showed the proteins to be 85.3 per cent. and 85.8 per cent. digested, respectively.[21] In view of the high digestibility of soy beans and peanuts and the possibility of using these legumes as vegetables served in the same manner as navy beans and garden peas, additional tests seemed desirable, and the experiments here discussed were conducted to determine the digestibility of soy beans and peanuts when cooked under conditions approximating those employed in the preparation of commercial canned beans.

GENERAL PROCEDURE

For these experiments whole mammoth yellow soy beans grown at the government field station at Arlington, Va., were obtained from the Bureau of Plant Industry, and raw shelled peanuts were bought from a local dealer. The soy-bean and peanut experiments were carried on separately, but the general procedure was the same. The peanuts were skinned and divided into half kernels, and both beans and peanuts were thoroughly washed and placed with sufficient salt and water in a pressure cooker under 15 pounds pressure for two hours, at which time they were thoroughly cooked.

The diet, so chosen that the accessory foods should supply a limited amount of protein and at the same time be typical of a simple mixed diet, consisted of soy beans or peanuts, bread, butter, sugar, oranges, and tea or coffee. Tea and coffee were taken hot; the rest of the diet was eaten cold. The experimental periods were of three days' duration. The six subjects were men from 19 to 41 years old who had acquired considerable experience in this type of work. They were informed that a large consumption of soy beans or

7. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **32**: 373 (Dec.) 1917.
8. Footnote 7, p. 375.
9. Daniels, A. L., and Loughlin, Rosemary: J. Biol. Chem. **33**: 296 (Feb.) 1918.
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11. Rubner: Ztschr. f. Biol. **16**: 119-128, 1880.
12. Malfatti: Jahresb. f. Tier-Chem. **15**: 412, 1885.
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15. Richter: Arch. f. Hyg. **46**: 264-273, 1890.
16. Woods and Mansfield: Bull. 149, U. S. Dept. Agr., Office Expt. Sta., 1904, p. 60.
17. Wait: Bull. 187, U. S. Dept. Agr., Office Expt. Sta., 1907, p. 55.
18. Oshima: Bull. 159, U. S. Dept. Agr., Office Expt. Sta., 1905, p. 224.
19. Mendel, L. B., and Fine, M. S.: J. Biol. Chem. **10**: 438, 447, 1912.
20. Lyman and Bowers: Ohio J. Sc. **18**: 279, 1918.
21. Bull. 717, U. S. Dept. Agr., 1918, pp. 18, 24.

peanuts was desired and that they could follow individual inclination in regard to the remainder of the diet.

A record of the weight of food consumed and the weight and chemical analysis of feces resulting from the experimental diet supplied data for calculating the coefficients of digestibility of the ration as a whole. The digestibility of the protein supplied by the soy beans or the peanuts was estimated by making correction for the undigested protein remaining from the accessory foods according to a method fully outlined in previous papers.[22] It was assumed that the proteins of bread,[23] butter,[24] and oranges [25] were 88, 97 and 85 per cent., digested, respectively.

STEAM-COOKED SOY BEANS

The six digestion experiments that were conducted with soy beans were divided into two series of three tests each. The first series commenced on January 29 and the second on April 9. Uniform experimental conditions were maintained in both series, the soy beans were all from the same lot, and none of the subjects assisted in more than one experiment. The cooked beans were soft and tender, but in many the thin skin remained unbroken.

The results of these experiments are summarized in Table 1.

TABLE 1.—DIGESTION EXPERIMENTS WITH SOY BEANS (STEAMED) IN A SIMPLE MIXED DIET

Experiment Number	Subject	Digestibility of Entire Ration: Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Ash, per Cent.	Estimated Digestibility of Soy-Bean Protein Alone, per Cent.
769	P. K.	78.8	88.0	97.0	62.3	74.8
772	J. C. M.	79.5	90.3	95.9	49.7	76.0
773	W. O'C.	84.5	88.8	97.9	57.5	82.7
835	J. F. C.	85.2	88.6	98.3	81.3	82.9
837	T. G. H.	80.1	84.5	96.5	74.0	80.0
838	F. A. K.	85.7	90.0	98.1	81.4	83.4
Average.....		82.3	88.4	97.3	67.7	79.9

The ration as a whole supplied 103 gm. of protein, 114 gm. of fat, 415 gm. of carbohydrate, and 3,100 calories of energy for each man daily. Its digestibility was found to be 82.3 per cent. for protein, 88.4 per cent. for fat, 97.3 per cent. for carbohydrate, and 79.9 per cent. for soy-bean protein, a value somewhat lower than the 85.3 per cent. previously reported [26] for protein of soy-bean flour. One subject ate an average of 478 gm. of soy beans daily for three successive days and experienced no physiologic disturbance.

STEAM-COOKED PEANUTS

Six digestion experiments were conducted with peanuts cooked as already described. The peanuts prepared in this manner were rather mealy, very palatable, and apparently thoroughly cooked; but while they still retained their original form (half kernels), the interior cellular structure was obviously somewhat altered, for the peanut kernels could be reduced to a pasty mass by very slight pressure. A summary of the results of the experiments with peanuts is given in Table 2.

Considering the diet as a whole, the subjects ingested 92 gm. of protein, 162 gm. of fat, 354 gm. of carbohydrate and 3,240 calories of energy daily; the digestibility was found to be: protein, 90.7 per cent.; fat, 83 per cent.; carbohydrate, 99.0 per cent. One subject consumed an average of 457 gm. of peanuts on each of three successive days without noting any physiologic disturbance. Contrary to expectations, the digestibility of the protein of steam-cooked peanuts, 92.8 per cent., was much higher than 85.8 per cent., that previously reported [27] for the digestibility of the protein of peanut flour. No data are available for ascertaining whether the peanut flour if steam-cooked would have been equally well assimilated. These results show that steam-cooked peanuts, which furnish relatively large amounts of essential amino-acids, are of unusual value for human food.

TABLE 2.—DIGESTION EXPERIMENTS WITH PEANUTS (STEAMED) IN A SIMPLE MIXED DIET

Experiment Number	Subject	Digestibility of Entire Ration: Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Ash, per Cent.	Estimated Digestibility of Peanut Protein Alone, per Cent.
854	J. F. C.	90.8	80.2	99.2	88.2	92.7
856	J. J. D.	90.0	81.1	99.2	86.9	94.0
857	T. B. H.	89.2	79.1	98.9	84.4	89.7
858	F. A. K.	93.0	90.7	98.5	90.4	95.9
859	P. K.	89.3	84.0	98.5	86.5	90.0
863	W. O'C.	92.0	83.0	99.5	83.9	94.4
Average...		90.7	83.0	99.0	86.7	92.8

COMPARISON OF THE DIGESTIBILITY OF SOY BEANS AND PEANUTS WHEN STEAM-COOKED AND WHEN GROUND INTO FLOUR

The results of the study of the digestibility of steam-cooked soy beans and peanuts and flours prepared from soy-bean and peanut press cakes are summarized in Table 3.

The digestibility of the protein supplied by steam-cooked soy beans is apparently less than that of the protein of soy-bean flour, owing, perhaps, to the fact that the thin unbroken skin that surrounds the cooked soy bean is impervious to the action of the digestive juices. It also may be due to difference in cooking.

The digestibility of the protein supplied by steam-cooked peanuts was found to be higher than that of the protein of peanut flour; but since no data are available regarding steam-cooked peanut flour, it is impossible to judge whether the particular cooking process is responsible for the higher digestibility of the steam-cooked peanuts.

TABLE 3.—DIGESTION EXPERIMENTS WITH STEAM-COOKED SOY BEANS AND PEANUTS

Legumes	No. of Experiments	Digestibility of Entire Diet: Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Aver. Daily Consumption of Legume Protein, Gm.	Estimated Digestibility of Legume Protein, per Cent.
Steam-cooked soy beans.....	6	82.3	88.4	97.3	67	79.9
Steam-cooked peanuts.....	6	90.7	83.0	99.0	50	92.8
Soy-bean flour*.....	7	86.6	94.2	96.3	70	85.3
Peanut flour†.....	11	90.1	95.9	97.9	65	85.8

* Bull. 717, U. S. Dept. Agr., 1918, pp. 18 and 19.
† Bull. 717, U. S. Dept. Agr., 1918, pp. 24 and 26.

CONCLUSIONS

While the carbohydrate content of the diet was well utilized in each series of experiments, it was found

22. Bull. 470, U. S. Dept. Agr., 1916, p. 7. Bull. 525, 1917, p. 4. Bull. 717, 1918, p. 15.
23. An average of forty-five unreported experiments with white flour.
24. Bull. 310, U. S. Dept. Agr., 1915, p. 21.
25. Connecticut Storrs Sta. Report, 1899, p. 104.
26. Bull. 717, U. S. Dept. Agr., 1918, p. 18.
27. Bull. 717, U. S. Dept. Agr.,1918, p 24.

that the carbohydrate of the entire diet of which steam-cooked peanuts formed a part was especially well utilized, 99 per cent. being digested.

The fact that large quantities of soy beans and peanuts were consumed daily for three successive days, without causing any physiologic disturbances, indicates that these foods cooked for two hours by steam at 15 pounds pressure are well tolerated by the human body.

The results of this investigation, considered in connection with the previously reported data regarding the nutritive and biologic values of these two legumes, gives evidence to justify the belief that soy beans and peanuts are especially valuable for human food, as compared with other legumes that have been studied with the same thoroughness.

Clinical Notes, Suggestions, and New Instruments

COMPLETE CLOSURE OF THE URINARY BLADDER AFTER COAGULATION OF TUMORS

GUSTAV KOLISCHER, M.D., AND J. S. EISENSTAEDT, M.D., CHICAGO
Attending Urologist and Associate Urologist, Respectively, Michael Reese Hospital

It has always been a cause of regret to genito-urinary surgeons that in most operations on the bladder it is impossible to deliver a finished product on account of the necessary or supposedly necessary tubal drainage of this viscus. This was one of the more important reasons for their taking up so enthusiastically the cystoscopic endovesical methods in the treatment of bladder tumors. Endovesical treatment today includes fulguration, galvanocauterization and diathermy.

There are cases, however, in which fulguration is not advisable on account of the character of the growth, or in which even the repeated application of the galvanocautery or the diatherm through the operative cystoscope is not successful, or cases in which, on account of the location or the extent of the tumor, an endovesical intervention *a priori* could not be expected to be sufficient.

The superiority of destruction by heat of vesical tumors over the excision with the knife is becoming more and more appreciated by urologists. The problem forced itself on our surgical judgment as to how to combine the advantages of this procedure with the elimination of the disagreeable features of the postoperative vesical drainage. In this endeavor we were guided by experiences in developing a method of complete closure of the bladder which quite constantly ensures primary union, even in the presence of vesical infection.

The essential features of this method are mattress sutures of the bladder wall with inversion of the mucosa edges, which union is reenforced by whipping over a simple continuous suture, and thorough subfascial drainage accomplished by placing a narrow rubber tube under the fascia of the recti and parallel to the incision. The ends of this tube are brought out at each end of the skin wound. The bladder is opened by suprapubic cystotomy in the usual manner. The seat of the tumor is freely exposed by retractors made of fiber or hard rubber, and the coagulation is thoroughly accomplished by the galvanocautery or by diathermy. The bladder and abdominal wall are then closed completely, except for the subfascial drainage.

The patient, after operation, urinates spontaneously or is catheterized at regular intervals. A permanent catheter is not used because of the danger of urethritis, vesical irritation and ascending infection. If cystitis occasioning marked or moderate symptoms is present, 20 per cent. argyrol solution is instilled into the bladder twice a day. The subfascial drainage tube is removed after twenty-four hours. The bladder incision and abdominal wound are usually entirely healed in seven or eight days. The condition and appearance of the former site of the tumor depends on the type of the destructive agent used. An eschar produced by the galvanocautery is exfoliated in from five to eight days, while that produced by the diatherm sloughs in from ten to sixteen days.

If malignancy is suspected or proved, radium or mesothorium is inserted into the bladder cavity by means of a urethral carrier.

It seems that the advantages of this procedure over the routine method of vesical drainage are obvious. Whether this technic is applicable to extensive carcinomas involving the base of the bladder remains to be proved by further experience.

A SUBSTITUTE FOR OPEN OPERATION IN SOME IRREDUCIBLE FRACTURES

J. STANLEY WELCH, M.D., LINCOLN, NEB.

Pursuant to the surgical principle of accomplishing most in the least radical manner, we have resorted to a simple method of reduction in several cases of fracture in which open operation seemed obligatory.

The mechanism of the reduction is a lever in the form of a small, strong, steel probe acting between the displaced fragment ends and retained in situ by the plaster cast. It is resorted to under surgically aseptic conditions with anesthesia, while being observed under the fluoroscopic screen. The instrument is introduced through the iodized skin on the side of the extremity most remote from large vessels. Its end is guided by watching in both axes under the fluoroscopic screen. It is carefully placed between the fragments in such a manner as best to pry them back into apposition. Then when they are reduced, the instrument may be withdrawn; or, in the event of a recurrence of displacement, it is surrounded with a small sterile dressing and the plaster splint is immediately applied. When this is firmly set, the protruding part of the instrument is cut off with a hack saw. No infection should occur, and in from seven to ten days we remove the probe with a pair of pliers without a change of the cast unless otherwise desired. No death of bone should occur in this time with the degree of pressure here necessary.

It is an occasional experience to find, in a fracture of both bones of the forearm or leg, an irreducible condition of one or both bones. It is a frequent experience to find that, once reduced, they do not so remain. We believe this simple method will satisfactorily retain many such fractures and prevent a much more radical operation or a more cumbersome dressing in extension.

PATHOLOGIC LYING IN A CRIMINAL*

A PSYCHOPATHIC PERSONALITY

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The case here reported shows emphatically the character deviation of a pronounced and persistent fabrication, abnormal in type; this is a degenerate condition and almost invariably accompanies other forms of degeneracy, as shall be illustrated in our subject, who was likewise guilty of the most hideous crimes.

It was Delbrück[1] who definitely isolated this form of falsification, and for it he coined the term "pseudologia phantastica," a name that has since been adopted by many German writers; others have styled the disorder "mythomania."

Kraepelin[2] under the caption of "pathologic liars and swindlers" says: "Here we have in general to deal not only with a hyperexcitability of the imagination and defective faithfulness of the memory, but also with a certain unsteadiness in the sphere of the emotions and of the will."

Swindling has not entered into the activities of our criminal, but this may have been due to lack of opportunity—he has long been a convict.

* Read before the Philadelphia Neurological Society, Jan. 23, 1920.

1. Delbrück, A.: Die pathologische Lüge und die psychisch abnormen Schwindler, Stuttgart, 1891: p. 131.

2. Kraepelin, Emil: Psychiatrie, Leipzig, Johann Barth 2: 831, 1904.

There is a poverty in English literature on the subject, but in this country Healy[3] has contributed a monograph; his studies have for the most part been juvenile cases, and he frequently found accusation accompanying this type of prevarication. In our individual, who is an adult, accusation is a rather pronounced feature.

Ely[4] reports the case of a young woman referred by the juvenile court who it was said had always been feebleminded. She ran away from home early in life and was grossly immoral. One of her stories was to the effect that when about 16 years old she became pregnant with an illegitimate child; her confinement was recounted most vividly, together with her subsequent love for the child. There was no physical evidence that she had ever been pregnant, and it was regarded as one of her many inventions.

The life history of our criminal reveals an astonishing amount of character deviation. In addition to the abnormal fabrication, there were two attempts at homicide, one successful; three attempts at suicide; probably rape, and possibly simulation of insanity. Since real names are inadvisable, those given are fictitious.

Francis, the prisoner, is 42 years of age and was born in Lithuania. He said his mother's husband was a builder of church organs whose work kept him much from home, and, during one of these absences, she became pregnant with this son; but this statement, which blackens his mother's character and stamps him with illegitimacy, is not above question.

After passing through the Russian gymnasium he began work as a telegraph operator, but his restless nature tired and he entered a military academy; on leaving there, he enlisted in the Russian guard, and it was during this service that he became infatuated with a Lithuanian girl called Marie, which was the determining cause of his blighted career, since it led to her death and his life imprisonment.

A difference in religion had led the father of this girl to forbid Francis' attention to her. However, absenting himself from the army without leave, he called at her home, but the father ordered him away. In a frenzied moment he pulled an ornamental hatchet from the wall and hit Marie in the head; she was not badly injured and recovered. He then cut his own throat, and after being taken to the hospital made a determined effort to tear open the wound. When sufficiently improved, he was tried for attempt to kill, attempt to commit suicide, and for desertion from the army. He was sentenced to imprisonment. With the birth of the czar's son and the granting of amnesty, Francis was placed on parole. In an effort to escape him, Marie came to America; but he violated his parole and followed. Arriving in Philadelphia in March, 1907, he located her. Marie, after considerable persuasion, was induced to come to his room, where, as she subsequently charged, he ravished her. He countered with the charge of theft—that she had stolen his pocketbook. This he told me was a lie and that he had invented the story for revenge. From his knowledge of sexual matters, Francis also challenged her virginity. He was arrested and placed in Moyamensing prison. Subsequently, the affair was quashed by his agreeing never again to attempt to see her. On release, he failed in his promise and endeavored to get her consent to matrimony; she positively refused whereupon, he became desperate and determined to kill her. The act was consummated in April, 1907. Marie was shot four times, and he then shot himself. Both were taken to the Pennsylvania Hospital. Marie died on the way. He lay unconscious for four days, and when sufficiently recovered, was again placed in Moyamensing.

The complicated mental picture then presented led to one of the most remarkable medicolegal cases of our courts. The prisoner has told me that he was not insane at the time but had been advised to "play crazy," and that he acted the part. The verdict was "guilty of murder in the first degree but now a lunatic." He was ordered to Norristown State Hospital and detained for one year, after which, he was returned to Moyamensing.

Technical difficulties then led to his appearance before different courts, until finally a jury rendered a verdict of first degree murder. The case was appealed, but the decision was sustained. Five different times the day for execution was set. Finally, on request, a member of the state committee of lunacy reviewed his mental history, examined him, and reported to the governor. After careful consideration, this able report recommended the extension of clemency, with the result that the death sentence was commuted to life imprisonment, and he was ordered to the Eastern State Penitentiary.

Now as to his fabrications: All who come in contact with Francis aver that he is a stupendous liar; but his most astonishing invention was while in Moyamensing. It related to another atrocious murder in which the prisoner said he was implicated, and which he attempted to tell a priest; the latter refused to confess him until the authorities had been apprised of his crime. This he acceded to by describing the murder of a man named Galwitz by another named Zellner. The prisoner stated he had witnessed this murder and stood by while a 5-foot grave was dug and the body placed therein. The cause of this crime was jealousy; both men had been intimate with the girl Marie, and this led one to kill the other. A detective was detailed to investigate the case, and the spot was located; but the presence of water rendered it a physical impossibility to dig a grave there. The whole matter proved to be a fabrication, and the case was dropped in the belief that the prisoner was simply "exercising his imagination." The man still recalls the circumstance and regards it a good joke.

Physical examination discloses no positive anatomic stigmas. In fact, judging from nature's evidence, the prisoner measures up well. In appearance he is tall, erect and finely proportioned; his head is well shaped and his countenance is rather inviting; he is polite, quick-witted, of the utmost assurance, an incessant talker, and with a great deal of general but superficial knowledge which he uses with considerable linguistic ability. In his personal habits he is clean, industrious and methodical, attributes which are noticeably rare with the criminal class.

The only neurologic finding is a slight motor paralysis caused by severance of the temporal branch of the temporofacial division of the right facial nerve which resulted from his attempt at suicide in 1907. A roentgenogram reveals the presence of a foreign body in the left temporal region of the brain, probably inoffensive, despite the prisoner's statement that he cannot lie on his left side; cell-mates have told me that he lies equally well on either side; or, as an Irish prisoner expressed it, "the man lied on all sides."

Francis is suspicious, and is constantly making accusations against overseers and cell-mates; this has led to his being tried in many parts of the prison, but the trouble continues. Those in charge soon learn to give as little heed as possible to his many inventions. The notes of one overseer show his impression; he wrote: "This prisoner is an awful liar; . . . said he saw two convicts trying to cut through their door; . . . said another prisoner was going to stab him with a pair of shears; . . . he is a professional at lying and I have seen many bad prisoners but never one like this man." A frequent charge made by Francis had been that cell-mates have secreted in their cells substances that are contrabrand, such as coffee, cocoa, sugar and money.

Once, with grave concern, the convict reported that he saw another inmates hide tools in the sewer preparatory to an attempt at escape; on investigation, it was found that the cover of the sewer, which the prisoner said he had seen removed, was securely cemented and had been so for years; it was but another myth.

At a former examination he stated that he had knowledge of seven languages—Russian, Lithuanian, Polish, Finnish, German, French and English. When shown French he failed to recognize it, and when told to write that language he wrote what appeared to be some Slavish dialect, which he explained was called French where he had studied.

If questioned concerning his fabrications, he attempts to pass the subject off lightly; but when pressed for an explanation he has said: "I was bluffing"; that "others have lied to

3. Healy, William: Pathological Lying, Accusation and Swindling: Boston, Little, Brown & Co., 1915, p. 1.

4. Ely, Frank: The Pathological Liar, Proceedings of Alienists and Neurologists of America, Chicago, 1917, p. 128.

me first"; that "often I have lied to defend or to protect myself, which I considered a justifiable fraud"; and that "sometimes I have lied to develop a situation about which I was suspicious."

The prison classification of this man is a criminal of the homicidal type. The further mental classification is psychopathic personality. Outstanding features are: emotional instability; abnormal sexuality; pathologic lying; possibly, still suicidal. Neurologic findings are: paralysis of part of the right facial nerve; bullet in the left temporal lobe of the brain, probably nonsymptomatic.

2117 Chestnut Street.

A CASE OF INCARCERATED HERNIA INTO THE UMBILICAL CORD

WILLIAM J. STANTON, M.D., WASHINGTON, D. C.

M. T. H., a girl baby, born, Dec. 22, 1919, and weighing 8 pounds, presented a large tumor mass about the size of a fist, within the umbilical cord. Transillumination revealed coils of intestine. A diagnosis of hernia into the umbilical cord was made, and immediate operation was advised. This was at first refused, but next day the parents consented, and the baby was sent to Georgetown University Hospital, where I operated, just twenty-four hours after I had delivered her. Dr. Thomas F. Lowe administered the anesthetic.

The wall of the sac consisted of amnion and peritoneum. The sac contained about 2 feet of large and small intestine. The appendix, though present, was not removed. The intestine was adherent over about half the surface of the sac. The intestine was beginning to show a dark reddish discoloration.

An incision of the umbilical ring and abdominal wall above the cord was made. The intestine was replaced and the wound closed with three silkworm-gut inverted mattress sutures. The baby suffered little if any shock, and made an uneventful recovery. The after-treatment consisted in a regular four-hour nursing schedule. The baby was returned to her mother the same night.

3323 O Street N.W.

THE EFFECT OF WEAK ACETIC ACID ON SPIROCHAETA PALLIDA

PRELIMINARY COMMUNICATION

HERMAN GOODMAN, B.S., M.D., NEW YORK

I wish at this time to give the clinical and experimental evidence as to the effect of weak acetic acid on *Spirochaeta pallida*, in order that corroborative work may be carried on.

It is generally admitted that syphilitic chancres of the vagina are less frequent than chancres of the neighboring parts. Most textbooks make the statement, and the figures are easily available. It is also generally admitted that the secretion of the vagina of the adult woman is acid. The secretion of the adjacent parts is alkaline in reaction. Certainly the vagina is equally subject to trauma and to the deposition of *Spirochaeta pallida*, as the cervix uteri or the labia, the usual sites of chancre on the female genitals.

In the few reports of chancres of the vagina which give the exact location of the initial lesion, it is most often in the posterior culdesac. The alkaline cervix uteri secretion which may collect here is the factor in the neutralization of the protective acid vaginal secretion.

The immunity that the vagina apparently has for syphilitic manifestations has been commented on in the past, as has its comparative immunity to chancroids and to the gonococcus.

With the object of determining the action of weak acetic acid on *Spirochaeta pallida* prior to using this solution to hemolyze blood in attempting to recover *Spirochaeta pallida* in samples of circulating blood, I noted the following: As opportunities presented themselves, spirochetes were sought for under the dark field. When found, acetic acid prepared from chemically pure glacial acetic acid diluted to 2, 1 and 0.5 per cent. with distilled water was run under the cover glass of different preparations of fresh spirochetes. Currents were of course set up, which caused a general movement of the material under observation. However, as soon as I could recognize objects again (within fifteen seconds), it appeared that the spirochetes were much changed. They had lost the regularity of coil, they were no longer straight, they were immotile, and they were carried passively on the currents. The effect was much like that described by Reasoner[1] for soap solution.

It may be noted that the mediums for the growth of spirochetes must be alkaline.

I was led to believe that *Spirochaeta pallida* is unable to live in an acid environment even as low as 0.5 per cent. acetic acid. It would appear, then, that an acid solution, such as weak acetic acid, may be of use in the prophylaxis of syphilis. The advantages of a nonpoisonous, liquid, easily procurable and adaptable local spirocheticide should warrant a serious study. It is proposed to carry on this investigation with animal inoculation, and also to determine whether acetic acid penetrates farther into tissues such as the skin or mucous membranes than solutions of other known local spirocheticides.[2]

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

LAXATIVE FRUIT CAKE

DR. EDWARD J. ROGERS, Pittsford, Vt., writes: "In your issue of Dec. 27, 1919, p. 1938, you speak of 'senna leaves, figs, dates, prunes, raisins—of each, equal parts.' Does this mean by weight or measure?"

COMMENT.—Since the dose of this "laxative fruit cake" is a slice, large or small, according to the requirements of the individual, exact proportioning of ingredients is not essential. Either weight or measure might be used; the former, being more accurate, would be preferred.

1. Reasoner, M. A.: The Effect of Soap on Treponema Pallidum, J. A. M. A. **68**: 973 (March 31) 1917.

2. In addition to the reference already given, the following references will be found of interest:

Barbiani: L'immunita della vagina per la affezioni veneree e sifilitische, Milan, 1900.

Belloir: Contribution a l'étude clinique de la syphilis vaginale, Paris, 1890.

Comandon: De l'usage de l'ultra microscope pour la recherche et l'étude des spirochetes, Paris, 1909.

Joseph: Lehrbuch der Haut und Geschlechtskrankheiten, Leipzig, 1905, p. 15.

Meningitic Form of Acute Poliomyelitis.—Every doctor realizes that the great fear at the back of his mind is tubercular meningitis. No disease is so deceptive, and the clinician has hardly a sure test by which he can guide his diagnosis, because the onset, though gradual, as a rule, may be as abrupt as in cerebrospinal meningitis, and any of the cardinal signs may be in abeyance. Examination of the cerebrospinal fluid may settle the diagnosis, but even this, in the absence of tubercle bacilli, may not be conclusive, because in this form of poliomyelitis the character of the fluid varies considerably. When taken early there is, as a rule, an increased cell count with a low globulin content, and the cell increase is in the lymphocytes and large mononuclear cells. In some cases, however, the polynuclear cells predominate. The absence of tubercle bacilli, of meningococci and other bacteria, will certainly suggest the possibility of poliomyelitis, and then the clinical signs will probably lead to the right conclusion.—*Clinical Journal*, December, 1919.

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SATURDAY, MARCH 20, 1920

NUTRITIVE REQUIREMENTS BASED ON ACCURATE STATISTICAL EVIDENCE

Few questions relating to nutrition and the bearing of the diet on human well-being have aroused more discussion in the last few years than has the subject of the protein requirement of man. Extremes of opinion have been advocated with much vigor. The assumed menace of a diet rich in protein has been pictured in the form of various nutritive dangers, such as the ills of the indefinable "autointoxication," the hypothetic "kidney overwork," arteriosclerosis and arterial hypertension developed by a surplus of nitrogenous waste products, and other equally indefinite factors. Instances of alleged benefit from reduction in the protein intake are often cited to substantiate the statements. Somewhat less aggressive, though by no means wanting in enthusiasm, are the counter claims of those who believe that the welfare of the race is bound up with liberality in the protein factor. Pointing to the parallel occurrence of low protein dietaries and undersized races, the advocates of abundant nitrogenous intake look on protein as a veritable stimulus to growth, vigor and even happiness. "Underfeeding produces gloom and moroseness unless other circumstances are more influential and oppose it." Such are some of the dicta of the opposing extremists.

The medical man is, or ought to be, sufficiently familiar with human psychology to appreciate the element of bias in many of the propagandas relating to health. At one time, not many months ago, the experience of the Germans with the enforced low-protein dietary of war time was proclaimed as clear cut evidence of the safety and, in cases, even the benefit of such a regimen. Later, when disease undoubtedly attributable to improper nutrition began to make its appearance in many places, the interpretations began to swing in a different direction with respect to the need of protein. The blame for many of the ills was now laid at the door of the inadequate supply of this foodstuff. As a matter of fact, so many variables are concerned in the malnutrition of central Europe—the inadequate calorific intake, the inappropriate and extremely limited variety of food, with a consequent reduction of quantity and defect of quality, including perhaps vitamin and mineral nutrients as well as the energy-yielding foods—that a rational interpretation of the causes is by no means easy in all cases. Otherwise the diversity of phenomena represented by beriberi, rickets, scurvy, war edema and pellagra might readily be ascribed to a single cause, such as low protein or inadequate calories.

There is something singularly satisfying in evidence that is essentially objective in character and does not require the consideration of the psychologic or human factor of interpretation. For this reason, well controlled experimental data from intelligently conceived investigations are always welcomed in the study of nutrition. In connection with the protein requirement of man, Sherman[1] of Columbia University has completed the desirable task of compiling the dependable statistics of the observations in which the protein intake appears to have been barely sufficient or not quite sufficient to result in equilibrium of intake and output, provided the total diet was adequate. Such figures must approximate the minimum requirement. This will, of course, necessarily vary with the character of the diet and certain other factors; but, on the whole, variations due to these must be offset to a considerable degree when the number of observations is large. Sixty-seven experiments on men show an average "indicated protein requirement" of 0.633 gm. per kilogram, while the forty-two experiments with women average 0.637 gm. per kilogram of body weight. It seems unnecessary, therefore, to distinguish between the sexes in this discussion since we are dealing with data calculated to a uniform basis of body weight. The general average of the 109 experiments shows an indicated requirement of 0.635 gm. of protein per kilogram of body weight, or 44.4 gm. for the "average man" of 70 kg., daily.

Such conclusions drawn from an unusually large number of observations, in which the personal equation of interpretation has been minimized, must not be regarded as representing the index for optimal protein intake; on the contrary, they must be looked on as the rock bottom or irreducible minimum in all considerations of adequate rationing, particularly when large groups of persons are to be provided for.

A similar survey made by Sherman[2] with respect to the phosphorus requirement of man deserves notice in this connection. The data from ninety-five experiments range from a minimum of 0.52 to a maximum of 1.20 gm., with an average of 0.88 gm. of phosphorus per 70 kg. of body weight daily. The experiments on men average 0.87 gm., and those on women average 0.89 gm. per 70 kg. daily. Sherman believes that we are probably justified in concluding that we now know

1. Sherman, H. C.: Protein Requirement of Maintenance in Man and the Nutritive Efficiency of Bread Protein, J. Biol. Chem. **41**: 97 (Jan.) 1920.

2. Sherman, H. C.: Phosphorus Requirement of Maintenance in Man, J. Biol. Chem. **41**: 173 (Feb.) 1920.

the phosphorus requirement with about the same probable accuracy that the protein requirement is known, and that about one-fortieth to one-fiftieth as much phosphorus (reckoned as element) as of protein is required in the maintenance metabolism of man. Such investigations of the dietaries of typical American households indicate that with few exceptions they appear to provide a somewhat more liberal margin of protein than of phosphorus. Nevertheless, the minimum requirement of the latter is apparently rarely approached. At any rate, as the conventional diet supplies phosphorus in forms entirely suitable for utilization by man, there is no ground for any commercial exploitation of unique types of phosphorus compounds that exhibit little advantage other than that of a large monetary return to a persistent promoter.

THE PHYSIOLOGIC SIGNIFICANCE OF A RECORD AEROPLANE FLIGHT

A few days ago an aeroplane carrying Major R. W. Schroeder of the American army aviation service reached an altitude of 36,020 feet, about 5,000 feet higher than the previous world's record for such a mode of flight. Only a few years ago this marvelous performance would have been rated as virtually impossible because of the limitations of the human organism at great heights. In the oft quoted balloon ascension of the meteorologist Glaisher, in 1862, an altitude of about 30,000 feet was reached. When the balloonist attained a height of 26,000 feet, he first noticed that he could not read his instruments properly. Shortly after this his legs became paralyzed, and then his arms, though he could still move his head. Then his sight failed entirely, afterward his hearing, and he became unconscious. Glaisher's companion, Coxwell, likewise incapacitated in the upper air, managed to open a valve which permitted the balloon to descend, and thus saved the lives of the men. Another historic instance of a record balloon ascension concerns the experience of Tissandier, the sole survivor of a party of three in the fatal trip of 1875. The balloon ascended 28,820 feet, but all the occupants of the car began to suffer before an altitude of 23,000 feet was reached, and two of them died.

The baneful effects on life in the rarefied air of higher altitudes usually makes itself manifest at a barometric pressure considerably lower than that represented in the classic instances just cited. In a review of the medical aspects of aviation, the experts of the Medical Research Laboratory of the Division of Military Aeronautics [1] assert that mountain sickness befalls some persons at a lower, others at a higher altitude; but it is also certain that no one who proceeds beyond a certain elevation—the critical line for him—escapes the malady. An elevation of 10,000 feet or even less might provoke it in some; others may escape the symptoms up to 14,000 feet, while only a very few, possessed of unusual resisting power, can without much distress venture upward to 19,000 feet. We are further reminded that the symptoms of mountain sickness depend not only on the nature of the individual and his physical condition, but also on various intricate contingencies, especially on the amount of physical exertion made in ascending; that is, on whether the ascent is performed by climbing or by passive carriage on horse, on railway train, or in an aeroplane.

What has made possible the penetration of the higher reaches of the atmosphere in these newer flights of man, including Rohlfs' ascent to 31,000 feet and Casale's unofficial record of 33,000 feet last year, and culminating in the splendid achievement of Schroeder in rising nearly seven miles above the earth? It has been the scientific demonstration that the predominant physiologic upset at high altitudes, whether it be exhibited as mountain sickness (mal des montagnes) or aviator's disease (mal des aviateurs) is primarily due to the deprivation of oxygen in the rarefied air. As long ago as 1878 the eminent French physiologist Paul Bert furnished clear experimental proof that the abnormal symptoms and dangers experienced under conditions of lowered barometric pressure are those of want of oxygen. Despite the various attempts to invoke other factors, the accumulated scientific evidence today supports Bert's conclusion that the essential cause of altitude sickness is lack of oxygen. Consequently, he who would attempt the conquest of the air several miles above the earth must be supplied with oxygen in sufficient abundance.

The adaptation of man to life at altitudes has occasionally been discussed in THE JOURNAL.[2] Important as they undoubtedly are for the mountaineer and, latterly, for the aviator under ordinary circumstances of flying, these adaptive responses cannot satisfy the needs of the organism in those record flights represented by Schroeder's attainment. Accordingly, it is significant that his failure to ascend even higher in the world's record flight was due, according to the press dispatches, to the exhaustion of the aviator's oxygen tanks which supplied the needed respiratory gas. It is this failure, we may assume, in the absence of official information, which robbed him of consciousness and thus was responsible for the spectacular fall of several thousand feet which almost cost Schroeder his life.

The glowing accounts of the new conquest of the upper air have been replete with praises of the superior motors, the dependable air compressors, the unique recording instruments, the heating devices that made it possible for man to endure a polar climate of 67 degrees below zero, and other mechanical features. It is more than likely that the record will again be broken;

1. Manual of Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, 1918, p. 8.

2. A New Record for Altitude, editorial, J. A. M. A. **72**: 496 (Feb. 15) 1919; The Medical Manual of the Air Service, ibid. **72**: 1368 (May 10) 1919; Deaths Incident to Aviation, ibid. **73**: 1444 (Nov. 8) 1919.

not, however, merely because these devices have been made more perfect and efficient, but also because science will have taught the aviator how to secure an unfailing supply of the indispensable oxygen. After the enforced consideration during the last few years of the abomination of noxious gases, it is a relief to return to the consideration of one that is truly beneficent.

APPLICATIONS OF CLINICAL CALORIMETRY

Several years ago (May, 1915), the *Archives of Internal Medicine* devoted a supplementary number solely to the presentation of pioneer results obtained by the method of clinical calorimetry. To some the subject seemed at that time to be far removed from any immediate application to the problems of medical practice. The technic of the investigations involved highly specialized training; the language in which some of the results were expressed had a novel and unfamiliar ring; and "basal metabolism" seemed at most a topic for the consideration of the trained physiologist and the pathologist.

In the few intervening years, the technic and the necessary apparatus for estimating the energy exchange in human subjects have been simplified so that they are no longer beyond the capacities of intelligent clinicians. To the uninitiated the methods sound more complex than they really are. They are not among the easiest of routine diagnostic procedures; neither is good surgery the work of a tyro; yet we do not relegate it to some superhuman person.

Recently the clinical importance of an estimation of basal metabolism in thyroid disease as an index of the toxicity factor has repeatedly been emphasized.[1] As McCaskey has pointed out, the differential diagnosis of many mild, atypical or very early cases of thyrotoxicosis by means of the ordinary clinical signs and symptoms can be made with only a varying degree of probability. The estimation of the basal metabolism furnishes the requisite objective data which verify a diagnosis and enable one to gage the value of therapeutic efforts. An excellent illustration is afforded by the studies of the basal metabolism in exophthalmic goiter which were started by Means and Aub[2] at the Massachusetts General Hospital nearly five years ago. It has been possible to contrast the more permanent effects of a variety of modes of treatment in a disease characterized by a high metabolism rate. Judging by this index of toxicity, it now appears that in the majority of cases the results after two or three years are equally as good with roentgen-ray treatment as with surgery. In securing the same end-results with surgery or with the roentgen ray, a lesser rest factor is necessary with the roentgen ray. With the roentgen ray there is practically no mortality. With surgery there is a definite one. Patients treated surgically do better, and the risk of operation is less, if they have previously had their thyroid and thymus glands irradiated. The risk of operation is greater and the need for preoperative roentgen-ray treatment is greater in cases with a very high metabolism and moderate tachycardia and moderate metabolism elevation.

From their studies with the aid of the respiration calorimeter, Means and Aub believe that the safest program for the treatment of exophthalmic goiter, as a whole, is the routine irradiation of thyroid and thymus glands, in all cases, with surgery held in reserve for patients who do not then do well. The Boston diagnosticians conclude that surgery is contraindicated with patients whose metabolism is rising in spite of complete rest in bed, and also patients of the type with moderate tachycardia and great metabolism increase, except when they have previously had the thyroid and thymus glands treated with the roentgen ray. If one is justified in asserting today that "in the management of exophthalmic goiter, periodic determination of the basal metabolism should be quite as much a routine as is the examination of the urine for sugar in diabetes mellitus," it must be admitted that clinical calorimetry has won a place for itself within an unexpectedly short period.

1. Means, J. H.: Studies of the Basal Metabolism in Disease, Boston M. & S. J. **174**: 864 (June 15) 1916. Means, J. H., and Aub, J. C.: A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism, J. A. M. A. **69**: 33 (July 7) 1917. Boothby, W. M.: Clinical Value of Metabolic Studies in Thyroid Cases, Boston M. & S. J. **175**: 564 (Oct. 19) 1916. McCaskey, G. W.: The Basal Metabolism and Hyperglycemic Tests of Hyperthyroidism, with Special Reference to Mild and Latent Cases, J. A. M. A. **73**: 243 (July 26) 1919.

2. Means, J. H., and Aub, J. C.: The Basal Metabolism in Exophthalmic Goiter, Arch. Int. Med. **24**: 645 (Dec.) 1919

THE PATHS BY WHICH TETANUS TOXIN AND ANTITOXIN ARE SPREAD IN THE BODY

It has long been recognized that tetanus poison has a special affinity for the nervous system. More than twenty-five years ago, Bruschettini[1] demonstrated that the toxin might be found in the nerves but not in the adjacent muscles and other tissues surrounding the point of subcutaneous injection. It is to Meyer and Ransome,[2] however, that medical science owes the complete proof that the tetanus poison is absorbed from the blood and tissues by the peripheral nerves and transported centrad along their paths. For example, when tetanus toxin is injected into the thigh muscles of an experimental animal, the poison is found at first only in the sciatic nerve of the same side and in the blood.

The process by which this transport of the tetanus toxins occurs has been widely discussed. For some time it was believed that the lipoids, which are conspicuously abundant in nervous tissues, are responsible for the selective transfer of the toxin. These com-

1. Bruschettini: Riforma med., 1892, referred to by Zinsser, Hans: Infection and Resistance, New York, the Macmillan Company, 1914, p. 41.

2. Meyer and Ransome: Arch. f. exper. Path. u. Pharmakol. **49**: 367, 1903.

pounds, like the fats, are known to have a specially marked solubility for certain types of compounds, notably some of the narcotic drugs. It was not unnatural, therefore, to assume some sort of chemical or physical affinity between the toxin and the lipoids of the nervous structures. The problems here at issue have more than merely academic interest, for the possibility of successful therapy largely depends on the solubility and mode of distribution of toxin and antitoxin in the tissues and fluids of the body. No amount of antitoxic substance, however large, and however potent it may be in vitro, will be effective if it cannot reach the *materies morbi* in the body itself. Obviously, if the nerves themselves offer a better point of therapeutic attack, antiserum might be injected more directly in the vicinity of the poison to be neutralized.

In the classic investigations on the action of tetanus toxin, it was found that when a nerve is cut, poison absorption ceases as soon as axis cylinder degeneration has set in. Meyer and Ransome concluded that tetanus toxin reaches the central nervous system solely by way of the axis cylinder of the motor nerves. Marie and Morax[3] had come to a similar conclusion. A reinvestigation of the problem at University College Hospital Medical School in London by Teale and Embleton[4] has emphasized the possible cooperation of other factors in the distribution of tetanus toxin. Their experiments show that although the poison ascends to the central nervous system by way of the axis cylinders of the nerves, it also to a great extent passes up the nerves to the cord by way of the perineural lymphatics. Blocking the latter paths greatly delays, and in some cases completely prevents, the occurrence of tetanus in the part corresponding to the nerve for which the lymph path has been blocked. Although tetanus toxin passes rapidly from the blood vessels into the connective tissue spaces and thence to the thoracic duct, the toxin does not pass from the capillaries of the central nervous system to its tissues.

The British investigators feel justified, further, in concluding that tetanus antitoxin is not carried in any degree to the cord either by the axis cylinders or by the neural lymphatics when inoculated directly into the nerve, but that its sole action when thus introduced appears to be the local neutralization of the toxin coming up the neural lymphatic sheaths. According to Teale and Embleton, this appears to be further evidence that tetanus toxin travels in the neural lymphatic sheaths; hence they conclude that antitoxin acts on the toxin in the circulation and tissues, and prevents its spread from there into the nerves and central nervous system, and that it has no effect on the toxin already traveling along the nerve or present in the central nervous system.

3. Marie and Morax: Ann. de l'Inst. Pasteur **16**: 818, 1902.
4. Teale, F. H., and Embleton, D.: Studies in Infection, II, The Paths of Spread of Bacterial Exotoxins with Special Reference to Tetanus Toxin, J. Path. & Bacteriol. **23**: 50 (Oct.) 1919.

Current Comment

THE NEW ORLEANS SESSION

The American Medical Association will hold its seventy-first annual session in New Orleans, April 26 to 30. A description of the features of the session and the preliminary programs appear in this issue. This is the fourth time the Association has convened in New Orleans. The twentieth annual session under the presidency of Dr. William Owen Baldwin in 1869 aided much in bringing the members of the medical profession in the South into cordial relationship with the national association following the Civil War. Then, in 1885, under the presidency of Dr. Henry F. Campbell, the thirty-sixth annual session was held in the Crescent City. In 1903, for the third time the Association met in New Orleans in its fifty-fourth annual session under the presidency of Dr. Frank Billings. Now we are to enjoy New Orleans hospitality for the fourth time; on this occasion the session will be opened under the presidency of Dr. Alexander Lambert of New York, and Dr. William C. Braisted, Surgeon-General of the U. S. Navy, will be inducted into the office of President. The physicians of New Orleans propose to maintain the reputation of their city for hospitality. They are resolved that the Fellows of the Association who attend the coming annual session will not only enjoy the program of the Scientific Assembly, but will also find every moment intervening between the scientific meetings fully occupied with social features which shall mark this annual session as providing an all-around good time socially. While the hotels of themselves may not be able to accommodate all those who will be in New Orleans, the Local Committee on Arrangements has undertaken and is accomplishing the Herculean task of assuring every visitor comfortable lodgings during the time of the meeting. Not only has there been provided a list of approved boarding houses, but the physicians themselves as well as other citizens of New Orleans, are opening their homes for the accommodation of the visiting profession. New Orleans is proud of the hospitality it extends to visitors who attend the Mardi Gras, and a like welcome awaits every one at the coming session of the Association.

THE SANITARY CONSCIENCE

In that superb series of essays which was to honor Osler in the life, but which his eyes never beheld and which is now lamentably enough a memorial to the great physician, Sir Auckland Geddes, the new ambassador of Great Britain to the United States, deplores that physicians in general lack the spirit of citizenship: They are unwilling, he says, to share governmental burdens; they feel but little of that mass emotion which is concerned for physical and mental development, for closer human relationship, and which is finding expression "in centers for child welfare, in schemes for housing the working classes, in the establishment of ministries of health, in reconstruction and research work, in the growth of the labor party, in the spread of socialism and, incongruous though it may seem, in

bolshevism and in the great ideal struggle to express itself through the League of Nations." With "brilliant exceptions," the medical profession, Geddes considers, is made up of men whose citizenship, such as it is, "is as divorced from their technical knowledge as is that of the speculator when he jerry-builds new slums." [1] Surely there is here no stricture as to the medical profession in the United States, which, in the last decade at least, has shown itself so zealous in the communal interest. Consider a few data in point: The medical profession several years ago sought most earnestly and with no selfish motive for the establishment of a national department of public health, with representation in the President's cabinet. This movement, promising so much nationwide beneficence, was frustrated through the efforts of agencies which can hardly be said to have been saturated with zeal for the welfare of our people. Also, there is even the insistence, by the informed physician, on the fact that tuberculosis is far from being only a doctor's affair, but that it is probably the most degenerating social and economic factor in civilization. Many, no doubt most medical societies, have their public health sections or committees in which the application of twentieth century preventive measures to the correction of untoward communal conditions has been thoroughly promulgated, in which factory insanitation, woman and child labor, impure air and water, and a thousand and one other aspects of general unhealthfulness are exhaustively considered. There does, indeed, appear to be in our body politic some indication of an upsurging "mass emotion" making for human physical and mental betterment. Rosenau of Harvard has better characterized this salutary and promising emotion as an awakening sanitary conscience among our people. "The modern science of preventive medicine," he has said, "teaches the lesson of the unselfishness of community interest and has been a potent biological factor underlying the present trend toward socialism." Such teaching, by physicians interested in the larger aspects of medical science, is now in the way of bearing fruit.

1. Geddes, Sir Auckland: Social Reconstruction and the Medical Profession, Contributions to Medical and Biological Research, Dedicated to Sir William Osler, in Honor of His Seventieth Birthday, by His Pupils and Co-Workers, July 12, 1919, p. 70.

Child Labor and the War.—The seventh annual report of the chief of the Children's Bureau of the U. S. Department of Labor points out that the federal child labor law which had gone into effect, Sept. 1, 1917, prohibited the employment of children under 16 years of age in mines and quarries and of children under 14 years of age in factories; limited the working day to eight hours for children under 16 years of age employed in factories, and prohibited work for them between 6 p. m. and 7 a. m. But this law was declared unconstitutional by the supreme court, June 3, 1918. The immediate effect of the supreme court decision in states where the state child labor standards were lower than those imposed by the federal law was the prompt restoration of the longer working day for children under 16 and an increase in the number of working children. In a number of states there was an appreciable increase in the violation of state laws. It was in recognition of the seriousness of this increasing employment of young children that the war labor policies board voted that compliance with the standards of the former federal child labor law should be required of establishments engaged on government war contracts made after the date of the decision.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

Personal.—Dr. Marcus W. Lyon, Jr., has taken charge of the pathologic work at South Bend, Ind.

Bill on Chiropractic.—There has been introduced by Congressman Esch a bill regulating the practice of chiropractic in the District of Columbia. This measure is similar to the one recently introduced relative to the practice of osteopathy in the district. It provides for the organization of a chiropractic examination and registration board; that applicants for chiropractic licenses shall be graduates of reputable schools of chiropractic, that the applicants will be required to give a demonstration of vertebral palpation, nerve tracing and adjusting, and such other subjects as the board may prescribe. A fee of $25 is required of all applicants seeking licenses. A renewal fee of $5 each year is required.

FLORIDA

Kansas City Physician in Florida.—Dr. Richard L. Sutton, Kansas City, Mo., was the guest of Dade County Medical Society at Miami, February 25, and delivered an address on "Cancer of the Skin," illustrated by lantern slides.

Personal.—Dr. John Keeley, health officer of the East Coast Congressional District, has resigned.——Dr. Daniel C. Campbell, Jacksonville, has been appointed head of the bureau of venereal diseases, succeeding Dr. Lorin A. Greene, Gainesville, resigned.

Public Health Service Takes Lake City Property.—The Columbia College property, Lake City, was taken over March 1, by Dr. Goff, U. S. P. H. S. The work of renovating and remodeling is to be pushed ahead as rapidly as possible. The hospital will be operated directly under the Bureau of War Risk Insurance.

GEORGIA

Ellis Law Adopted.—Decatur County has adopted the Ellis health law and will begin operating with a full-time commissioner of health very shortly. Decatur is the seventeenth county to adopt this law.

Judgment Against Physician.—The damage suit brought by Mrs. Marie W. Whitman against Dr. William B. Crawford, Savannah, in which $20,000 damages were claimed, is said to have been decided in favor of the plaintiff, January 28, a jury awarding her damages of $2,000.

Free Clinic.—The Chamber of Commerce of the city of Fitzgerald held a special meeting, at which the members of the Ben Hill County Medical Society were guests, in an endeavor to organize against vice and venereal diseases. The meeting was addressed by Dr. Josephus P. J. Bowdoin, Adairsville, director of the venereal disease control department of the state board of health. As a result of the meeting a free clinic will be organized in Fitzgerald.

ILLINOIS

Physician Arrested for Sedition.—Dr. Oscar J. Brown, DeKalb, leader of radicalism in his section of the state, is said to have been indicted by a special grand jury, March 9, charged with violation of the Illinois sedition act.

Physician's License Revoked.—Monday, March 1, 1920, the Department of Registration and Education revoked the license of Dr. Warren D. Scott, Decatur, on the ground that he had been conducting offices in different parts of the country under the name "United Doctors."

Personal.—Dr. Frederick H. Lamb, Davenport, Iowa, has been appointed pathologist to St. Anthony's Hospital, Rock Island.——Dr. Edmund Summers, Mattoon, while driving his automobile across the tracks of the Illinois Central Railroad near Mattoon, February 27, was struck by a train and seriously injured. He is under treatment in the Mattoon Hospital.

Public Nurses Provided.—As a result of a recent conference between Dr. C. St. Clair Drake, Springfield, state director

of public health, and Miss Helen Fox, Washington, superintendent of the public health nursing service of the American Red Cross, every community in Illinois of more than 5,000 population will be provided with a community nurse. Miss Etta Lee Gowdy was chosen supervising nurse for the state, and Miss Minnie Ahrens for the Chicago district.

Chicago

Honor Dr. Gilmer.—The Chicago Dental Society will give a dinner in honor of Dr. Thomas Lewis Gilmer, March 23, in the gold room of the Congress Hotel.

Physician Arrested for Sedition.—Dr. Karl F. M. Sandberg is said to have been indicted by a special grand jury, March 9, charged with violation of the Illinois sedition act.

Physician Fined.—Dr. Alois C. Rasmussen is said to have been fined $100 and costs by a police magistrate in Oak Park for failure to report a case of scarlet fever to the health commissioner of that village.

Personal.—Dr. Hugh N. MacKechnie has resigned from the medical department of Loyola University.——Dr. Effie L. Lobdell has been appointed professor of obstetrics in the Illinois Post-Graduate Medical School.

Dr. Wile in Chicago.—An informal dinner in honor of Dr. Udo J. Wile, Ann Arbor, was given at the University Club, March 17. After the dinner Dr. Wile presented a paper before the Chicago Medical Society on "A Critical Study of Two Obscure Phases of Hepatic Syphilis."

Effect of Prohibition.—It is announced that the Washingtonian Home closed its doors, March 15, and moved to much smaller quarters at the Martha Washington Home on Irving Park Boulevard. The home was founded in 1863, and since that time has cared for 50,000 liquor and drug addicts.

Research Club Meeting.—The Medical Research Club of the University of Illionis held its fifty-second meeting, March 12, at the City Club. Prof. Louis Kahlenberg of the University of Wisconsin detailed "The Result of Experiments in the Passage of Substance Through the Skin by Osmosis," and Dr. Edward H. Ochsner spoke on "Osmosis in Relation to Clinical Medicine."

Medical School Changes Name.—Aug. 1, 1919, legal authority was granted to the Chicago Hospital College of Medicine, an institution rated as Class "C" by the Council on Medical Education, to change its name to the Chicago Medical School. The certificate filed in the office of the Secretary of State of Illinois, Feb. 5, 1915, grants this college authority for

> "Education and general contracting, including the operation of hospitals, sanitariums, laboratories, preparatory and professional schools and the conferring of the degrees of Bachelor, Master and Doctor of Sciences, Arts, Laws, Medicine, Surgery, Public Health, etc."

INDIANA

County Hospital Favored.—At the city session, March 9, the residents of Blackford County voted for the erection of a county hospital to cost $80,000. The proposal won by a majority of 782, the total votes cast being 2,262.

Deaths in Indiana.—The registrar-statistician of the state board of health reports that there were 9,184 fewer deaths in the state in 1919 than in 1918, the respective figures being 37,077 and 46,261. There was also a decline of 5,623 in births in 1919, as compared with the previous year, the respective figures being 58,690 and 64,313.

Personal.—Dr. George S. Bliss, Fort Wayne, superintendent of the state school for the feebleminded has resigned to accept the position of superintendent of the school for feebleminded of Honolulu, Hawaii, and Dr. Melvin Druckmiller has been appointed acting superintendendent.——Dr. Charles G. Beall has been appointed a member of the medical corps of the institution.——Dr. Osborne T. Brazelton, Princeton, while returning with his family in his car from Patoka, January 29, was shot at, the bullet crashed through the windshield of his car and he suffered a number of slight wounds of the face.——Dr. Alembert W. Brayton, Indianapolis, celebrated his seventieth birthday anniversary, March 3.——Dr. George W. Frederick, Kokomo, was operated on at the Good Samaritan Hospital, Kokomo, February 24, for the removal of gallstones.

MARYLAND

Personal.—Dr. Allen W. Freeman, Columbus, commissioner of health for Ohio, lectured on the public health administration of Ohio, March 8, at the School of Hygiene and Public Health, Johns Hopkins University.——Dr. Edgar M. Parlett, Baltimore, formerly supervisor of sanitation in the relief department of the Baltimore and Ohio Railroad at Baltimore, has been appointed manager of the health and sanitation bureau of the Carnegie Steel Company, with headquarters at Pittsburgh.——Dr. William S. Halsted, Baltimore, has been elected to honorary foreign membership in the Royal Academy of Medicine, Belgium.

Colleagues Honor Professor Welch.—In April Dr. W. H. Welch reaches his seventieth birthday. As a recognition of this event, his friends have determined to preserve in suitable form the chief contributions of Dr. Welch to medical literature. They have been brought together for publication in three volumes. Friends and former pupils of Dr. Welch are invited to subscribe. The volumes will be issued by the Johns Hopkins press under the editorial supervision of a representative committee. The three volumes, bound in linen, are offered to subscribers at $16.50. Copies, which will be numbered and assigned in order of subscription, may be secured by addressing the press.

MASSACHUSETTS

Personal.—Dr. Michael F. Burke, Natick, sustained serious injuries of the head and back when his sleigh was struck by a Boston and Worcester street railway car in Natick, February 9.——Dr. Frederick R. Barnes, Fall River, has been appointed associate medical examiner (coroner) for the Third Bristol District, succeeding Dr. John H. Gifford, deceased.

MICHIGAN

Medical Building for Flint.—Twenty-five physicians and dentists of Flint have incorporated the Flint Medical Association with a capital stock of $50,000, the purpose of which is to erect a six story building to be devoted exclusively to professional purposes.

Personal.—Members of the Pontiac Medical Club, February 25, gave a dinner in honor of Dr. Joseph G. Knapp, former secretary of the club who is moving to Cleveland, and presented him with a leather traveling case. Dr. Carlton D. Morris, Pontiac, was selected president; Dr. John W. Fox, Pontiac, vice president, and Dr. Harry B. Yoh, Pontiac, secretary.——Dr. Vilda S. Laurin has been appointed acting city physician of Muskegon, succeeding Reuben J. Harrington.

The Care of Children's Teeth.—The Genessee County Medical Society, at a recent meeting in Flint, adopted a resolution agreeing to take every opportunity to instruct those coming under the care of the members with reference to the need of beginning the care of the teeth of their children at 2½ or 3 years of age, or as soon as erupted; agreeing to give all children coming under their care competent and conscientious attention; endorsing the start made by the dental division of the health department of Flint, in the establishment of free dental clinics; recommending the extension of this work, and the need of competent care with more frequent examinations, and advice as to matters which cannot readily be made practical in the public dental clinic. The dental division of the department of health now has three full-time dentists and one dental hygienist. The aim of the department is to build it up, so that free dental care may be given to all children whose parents wish to take advantage of it.

MISSISSIPPI

Funds Provided for Malarial Survey.—The city council of Columbus, February 17, made an appropriation of $3,000 for carrying out a malarial survey.

Colony for Epileptics.—The state senate, February 25, passed a bill for founding, equipping, and conducting a state institution or colony for the feebleminded and epileptics.

State Board Meeting.—At the annual meeting for organization of the state board of health held in Jackson, February 27, Dr. J. Harvey McNeill, Olive Branch, was elected president of the board, and Dr. Waller S. Leathers, University, was reelected secretary and executive officer.

New Hospital Building for Soldier's Home.—The delegation from the state legislature which visited the Jefferson Davis Soldiers' Home, Beauvoir, February 28, expressed themselves as being in favor of providing the home with a new hospital, the present structure being regarded as inadequate and unsafe. It is proposed to erect a new brick hospital to cost $125,000.

Personal.—Dr. John A. Mead, Logtown, has been appointed health officer of Hancock County, to succeed Dr. Joseph W. Moody, Kiln, resigned.——Dr. George Y. Hicks, Vicksburg, has been appointed superintendent of the State Charity Hospital, Vicksburg.——Dr. James O. Ringold has been elected health officer of Montgomery County.——Dr. James A. Toole, Marks, has been elected health officer of Quitman County. ——Dr. William I. Marsalis, Centerville, has been elected health officer of Wilkinson County.

NEW MEXICO

Personal.—Walter M. Connell, chairman of the city commissioners of Albuquerque, has been appointed first vice president of the New Mexico Public Health Association to fill the vacancy caused by the death of Dr. Oliver T. Hyde. ——Dr. Frank N. Carrier, Santa Rita, has been elected secretary, and David R. Boyd, treasurer, of the New Mexico Public Health Association.——Dr. Le Roy S. Peters, Albuquerque, has been appointed medical director of St. Joseph's Hospital, succeeding Dr. Oliver T. Hyde, deceased. Dr. Arno Klein, Albuquerque, has been appointed assistant medical director of the hospital.

New Health Law.—Senate bill No. 5, which passed the senate with a vote of seventeen to five and the house of representatives unanimously and was signed by the governor, March 1, provides that, whenever in the opinion of the commissioner of health, conditions require the employment of persons in addition to county and city health officers to carry out the health laws, rules and regulations, these may be employed by the governing boards of counties and incorporated municipalities. To provide for the current expenses of the health department, boards of county commissioners are authorized to levy a tax not to exceed one-half mill on each dollar of taxable property in the county, exclusive of that within incorporated municipalities. The governing bodies of such municipalities may levy a tax not exceeding one-half mill on each dollar of taxable property within their boundaries.

NEW YORK

Personal.—Dr. William L. Munson, Granville, sanitary supervisor who was taken ill with pneumonia while in Plattsburg in connection with the public health course for nurses at the Champlain Valley Hospital, is convalescent and has returned home.

Civil Service Examinations.—The state civil service commission announces that examinations will be held, April 10, for the positions of bacteriologist-pathologist, state department of health, with a salary of $2,500 to $3,000; laboratory assistant and bacteriologist, state department of health, with a salary of $900 to $1,320, and laboratory apprentice, state department of health, with a salary of $840.

Beneficiaries of Dr. John Van Der Poel's Will.—The will of Dr. John Van der Poel, who died, February 23, disposes of an estate of more than $200,000, and many family heirlooms, one of which is "an old English pepper grinder," which had been in the family many generations, and which is bequeathed to his attorney Edward R. Boise. A painting on wood by Egbert Van der Poel, dated 1640, and Rembrandt's "Lessons in Anatomy" go to the Albany Institute and Historical Society.

New York City

Appointed City Bacteriologist.—Miss Margaret F. Upton, formerly connected with the laboratory of the New York Post-Graduate Hospital, has been appointed city bacteriologist of Utica.

Encephalitis Lethargica.—According to the records of the New York City Health Department there have been reported from January 1 to March 9, 175 cases of encephalitis lethargica with forty deaths. It is said that there are more cases at present than at any previous time.

Drug Clinic Closed.—The drug clinic of the municipal health department which was opened last April after a series of federal raids which lessened the illicit traffic in narcotics and caused suffering among drug addicts, was closed, March 6, since the need for the clinic has apparently passed.

Personal.—Dr. Wilfred T. Grenfell of the Grenfell Annual Surgical and Health Mission to Labrador arrived in New York on the *Carmania* after a three months' lecture trip abroad.——Dr. John M. Wheeler has been elected ophthalmic surgeon to the New York Eye and Ear Infirmary, succeeding Dr. John E. Weeks, who has been appointed consulting surgeon to the institution.

New York University Medical Alumni to Organize.—A meeting has been called by the organization committee, of which Dr. Robert J. Carlisle is chairman, for March 24, at the Carnegie Laboratory for the purpose of organizing the medical almuni of New York University. There are more than 6,000 living alumni of the medical school and it is believed it will prove one of the strongest alumni organizations among medical schools in this country.

PENNSYLVANIA

Chemists Die.—Leonard Merritt Liddle, aged 26, research chemist of Mellon Institute, Pittsburgh, died, February 21. ——Dr. Francis C. Phillips, aged 69, retired dean of the chemistry department of the University of Pittsburgh, and a member of the faculty for more than forty years, died, February 16.

Pennsylvania Bacteriologists Organize.—March 9, the bacteriologists of Eastern Pennsylvania met in the laboratory of hygiene of the University of Pennsylvania, Philadelphia, and organized a local branch of the Society of American Bacteriologists, electing Dr. David H. Bergey, Philadelphia, chairman; Dr. Courtland Y. White, Philadelphia, secretary-treasurer, and Dr. Claude P. Brown, Ambler, a member of the executive committee. The society will meet on the second Tuesday of each month, excepting June, July and August.

Philadelphia

Four Physicians Held.—Charged with violation of the state advertising act, four physicians were held under $600 bail for court yesterday by Magistrate Macleary. They are: Drs. David Weissman, Lawrence Kauffman, Marshall A. Davis and Harry Y. Messec. The arrests followed written complaints to Mayor Moore.

Obstetric Societies Joint Meeting.—March 9, the Philadelphia Obstetrical Society was the guest of the New York Medical Society. Clinics were held throughout the day in New York. In the evening a dinner was held at the Hotel Pennsylvania. Dr. Edward P. Davis read a paper entitled "Intestinal Infection in Pregnancy, Labor and Puerperium."

Memorial to Dr. Wood.—A special meeting of the College of Physicians was held, March 19, as a memorial to Dr. Horatio C. Wood. Dr. George E. de Schweinitz read a memoir of Dr. Wood. "Recollections of a Pioneer in Pharmacology in the United States," was read by Dr. Hobart A. Hare; "An Appreciation," by Dr. Francis X. Dercum, and "Reminiscences, Chiefly Neurological and Medico-Legal," by Dr. Charles K. Mills.

Personal.—Charles R. Stockard, Ph.D., professor of anatomy at Cornell University Medical School, New York City, read a paper on "Growth Rate and Its Influence on Structural Perfection and Mental Reactions" before the Philadelphia Psychiatric Society, March 12.——Dr. Judson Daland presented his resignation as a censor of the Philadelphia County Medical Society at its meeting, February 25, after twenty years of service in that office.

More Arrests in Sanitation Drive.—March 8, thirteen persons were arrested for violation of sanitation laws, bringing the total of arrests in the last three weeks, under the direction of the health department, to more than 150. Most of the cases recently were scavengers caught in the downtown section upsetting receptacles and strewing the streets with waste. They were fined and released with a reprimand if it was their first offense. Dr. Charles L. Furbush, director of public health and charities, is determined that all violators of sanitation rules shall be vigorously prosecuted and all householders who dump ashes in the streets or who do not provide proper receptacles shall be subject to arrest.

CANADA

Health Budget.—The estimates of the Toronto board of health for 1920 amount to $1,067,216, but the board of control cut more than $100,000 from the estimates. For epidemics $100,000 is allowed, and of this amount $74,000 has already been spent.

Hospital News.—Montreal is to have a Chinese hospital. The accommodation is to be for twenty-five beds. The temporary institution has already ten patients. It is claimed to be the first Oriental hospital in Canada.——Chatham, Ont., will raise $50,000 this year for the endowment of its general hospital.

Public Health News.—Medical inspection of schools has been inaugurated in Brantford, Ont., with Dr. Alexander in

charge.——Dr. C. Achille Daigle, Montreal, has been elected a member of the central board of the Roman Catholic School Commission of that city.

University News.—Owing to the fact that he has been appointed British ambassador to the United States, Sir Auckland C. Geddes has resigned the presidency of McGill University, Montreal. A new principal is being sought and preference will be given to a graduate of McGill, and a Canadian.

Influenza.—Up to Monday, March 1, it was announced that in Montreal during the influenza epidemic there were 657 deaths from influenza, pneumonia, and bronchopneumonia. About fifty cases a day were being reported, March 1.—— Quebec City, March 4, it was announced, had had 500 cases of influenza with only two deaths.——The total number of deaths for influenza and pneumonia in Toronto for February was 656, out of a total death rate for the month of 1,191.

Sale of Liquor.—The Manitoba liquor act has been amended. Sale of liquor by wholesale druggists has been abolished. Medical men are limited to 2 quarts a day for professional purposes and 100 prescriptions a month; hospitals, 5 gallons a day.——Hon. J. R. Boyle, attorney-general of Alberta, recently announced in the legislature of that province that the profits on the government sale of liquor had been more than $2,000,000 in 1919; and that the illegal sale of liquor had amounted to about $3,500,000.

Public Health Notes.—The province of Quebec has lifted the ban on Ontario residents and others journeying into Quebec. Vaccination is now no longer required.——The Superior Board of Health of the province of Quebec will shortly inaugurate a compaign against tuberculosis in that province. A committee has been appointed consisting of Drs. E. M. Desaulniers, St. Lambert, Chambly; Charles R. Paquin, Quebec; Joseph E. Laberge, Montreal, and J. A. E. Beaudoin, Montreal, as secretary, to study the question and to advise what steps should be taken to make the campaign effective.

University News.—The fund for the University of Montreal (Laval), recently destroyed by fire, has attained to more than $3,500,000.——Toronto University needs $4,000,000 for its reorganized medical department. Dr. George E. Vincent of the Rockefeller Foundation has been in Toronto the past week and has been conferring with the special committee of the medical department presided over by Dr. Alexander Primrose, C.B. It is planned to pay whole-time professors in medicine, surgery, obstetrics, pathology, and perhaps one or two others, $10,000 a year. Representatives from Queens, Western at London, and from Winnipeg interviewed Dr. Vincent as to their likelihood of participating in the $5,000,000 to be alloted to Canada for medical education from the foundation.

Personal.—Dr. Edward C. Arthur, Vancouver, B. C., has been appointed traveling medical health officer of the province.——William James Chapman, Kenora, has been D. A. M. S. Military District No. 1, Winnipeg since July last.——Dr. William Harold Graham Aspland, London, has attained the rank of lieutenant-colonel and is now living in Middlesborough, Yorkshire, England.——Dr. Howard Green Barrie has returned to Shanghai after nearly five years' service in Serbia, Egypt and Alexandria.——Herbert Eldon Roaf, London, has been appointed to the chair of physiology in the University of London, England.—— Dr. George Barnes Archer has returned to Ranaghat, India, and resumed his prewar activities as medical missionary. ——Gerald Allison, Picton, Ont., M. B. Tor., 1915, after serving with the R. A. M. C., has returned to Toronto and received an appointment on the staff of the Toronto General Hospital.

GENERAL

Radiologists to Meet.—The Radiological Society of North America will hold its annual meeting in New Orleans, April 23 and 24.

Thoat, Nose and Ear Men to Meet.—The annual meeting of the American Laryngological, Rhinological and Otological Society will be held in Boston, June 2, 3 and 4, under the presidency or Dr. Harris P. Mosher, Boston.

Legislation on Child Welfare.—The legislative appropriation bill which has just passed the House of Representatives contains a provision appropriating $80,000 for the investigation and report on matters pertaining to the welfare of children and child life and especially to the question of infant mortality within the District of Columbia. This work is to be undertaken by the Children's Bureau of the Department of Labor.

Chairman Chosen.—The following chairmen have been selected for the various sections of the annual meeting of the National Tuberculosis Association to be held in St. Louis, April 22 to 24: medical section, Dr. George Dock, St. Louis; pathologic section, Dr. Eugene L. Opie, St. Louis; advisory council, Dr. Allen W. Freeman, Columbus, Ohio, and sociologic section, Dr. Hibbert W. Hill, St. Paul.

Opportunities for Physicians in China.—The Interchurch World Movement of North America has issued a special appeal for services of medical women in the Orient. There is great need for American medical women in orthopedic surgery, and there is also great opportunity for laboratory trained women. The medical schools of Canton, Hankow, Nanking, Peking and Soochow also offer some practical opportunities.

American Life Convention.—The tenth annual meeting of the medical section of the American Life Convention was held at French Lick Springs, Ind., March 10 to 12, under the chairmanship of Dr. C. Naumann McCloud, Minneapolis. The following officers were elected: Dr. Frank L. Truitt, Indianapolis, chairman; Dr. Calvin H. English, Fort Wayne, vice chairman; Dr. Frank L. B. Jenney, Chicago, secretary (reelected), and Dr. Henry Wireman Cork, Minneapolis, a member of the board of managers.

Christmas Seals.—At a conference of representatives of state associations and the National Tuberculosis Association in Chicago, January 8 to 10, it was reported that the proceeds of the 1919 sale of Christmas seals would amount to more than $4,100,000.——The chairman of the central committee of the American Red Cross has notified the National Tuberculosis Association under date of January 27, that the American Red Cross will discontinue the sale of seals as a means of raising funds for the organization.

Mortality Statistics.—The Bureau of the Census has just issued Bulletin No. 41, giving the mortality statistics for 1918. The bulletin includes the most important facts relative to deaths recorded in the death registration area. The states of Illinois, Louisiana and Oregon have been added to the area, so that the bulletin concerns a population of 81,868,104, or 77.8 per cent. of the total population of the United States. The total number of deaths for this area, including 26,209 soldiers, sailors and marines, was 1,471,367, corresponding to a death rate of 18 per thousand population, or 3.8 higher than the rate for 1917, which was 14.2. The great increase in the death rate was believed to be entirely due to the high mortality caused by the pandemic of influenza.

National Board of Medical Examiners Incorporated.—Senate Bill No. 3959 has been introduced by Senator Kellogg to incorporate the National Board of Medical Examiners of the United States of America. It provides that Rear Admiral William C. Braisted, U. S. Navy; Major-Gen. Merritte W. Ireland, U. S. Army; Surg.-Gen. Rupert Blue, U. S. P. H. S.; Admiral Edward R. Stitt, U. S. Navy; Col. Louis A. LaGarde, M. C., U. S. Army, retired; Asst. Surg.-Gen William Colby Rucker, U. S. P. H. S., and Drs. Herbert Harlan, Baltimore; Isadore Dyer, New Orleans; Victor C. Vaughan, Ann Arbor, Mich.; Walter L. Bierring, Des Moines, Iowa, and such other persons as may be chosen who are members of the National Board of Medical Examiners, an unincorporated, nonprofit association known as the National Board of Medical Examiners, and their successors, are hereby created and declared to be a body corporate.

Bequests and Donations.—The following bequests and donations have recently been announced:

Blackford County Hospital, Hartford City, Ind., a donation of three city blocks in Hartford City and $5,000 for improvements thereon by Mrs. H. B. Smith in memory of her husband.

For a free hospital for Indians near Henrietta, Okla., $1,000,000 by Jackson Barnett, an Indian of Oklahoma made wealthy by oil.

McGill University, Montreal, $5,500 for a scholarship in medicine in memory of his son, Lieut. Walter W. Hoare, by Dr. Charles W. Hoare, Walkerville, Ont.

Harbin Hospital, Rome, Ga., a donation of radium costing between $6,000 and $10,000 by J. P. Cooper.

Mercy Hospital, Chicago, $250,000 by the will of Charles E. Haines, St. Charles.

Women's Medical College of Pennsylvania, Philadelphia, $4,000 for an endowment to educate a woman medical missonary for work in China, by the Board of Foreign Missions of General Synod of the Reformed Church.

Michael Reese Hospital, Chicago, $200,000 by the will of Otto Baer.

American Hospital, Paris, a donation of 4 946,000 francs by Mrs. Robert Bacon, widow of the late American ambassador to France for

the endowment, in memory or Colonel Bacon, of twenty-four beds in free wards of the hospital to be built at Neuilly. Mr. Henry P. Davison of the American Red Cross has transferred 750,000 francs, the remainder of one of the war funds of which he was chairman, to the American Red Cross Hospital in France to that part of the hospital devoted to the Bacon free wards.

Lankenau Hospital, Philadelphia, $5,000 by the will of Gustaf A. Schwartz.

Legislation on Mailing of Chemicals.—Congressman Halvor Steenerson of Minnesota has favorably reported from the Committee on Post Offices and Post Roads a bill amending the penal code of the United States which forbids the transmission through the mails of "all kinds of poison" and "chemicals." The bill as reported will permit the postmaster-general to make regulations on this general subject. In a letter to Congressman Steenerson, Postmaster-General Burleson says:

"There is a widespread public demand for the admission to the mails of certain classes of matter, and the proposed legislation is designed to meet this demand. Many requests from manufacturers, chemists, physicians, surgeons, druggists, dealers in medicines and their associations, etc., to extend to them the facilities of the parcel post for the transportation of medicines and drugs, have been received, it being urged that the exclusion of such matter from the mails works a peculiar hardship on physicians, druggists, dentists and veterinarians who are located at points remote from express offices, they having no direct way under the present law of getting small shipments of drugs. The manufacturers and dealers are equally interested, as the parcel post is the only direct way of communicating with persons authorized to handle habit-forming drugs."

The law as amended will permit the sending through the mails of poisons, chemicals, and other articles hitherto forbidden, under special regulations relating to the subject made by the Post Office Department. The bill specifically provides, however, that these articles are to be sent "from the manufacturer thereof or dealer therein, to licensed physicians, surgeons, dentists, pharmacists, druggists and veterinarians."

FOREIGN

Vaccination Compulsory in Czechoslovakia.—It is said that a law of date of last July makes vaccination compulsory in Czechoslovakia during the first year and again at the completion of the seventh and of the fourteenth years.

Credé Centennial.—Both the method of placental expression and the silver nitrate prophylaxis of ophthalmia neonatorum were introduced by K. S. F. Credé of Berlin, the centennial of whose birth was recently celebrated in Germany.

British Medical Association Meeting.—The next annual meeting of the British Medical Association will be held in the University of Cambridge in the last week in June under the presidency of Sir Thomas Clifford Allbutt, who was president of the association at the opening of the war, since which time no meeting has been held.

Requirements to Practice in Hayti.—A communication from a reliable source states that physicians of the United States who desire to enter practice in Hayti may become qualified to do so by presenting their original diploma of graduation from medical schools and evidence of their preparation and licensure to the National School of Medicine, Port au Prince, Hayti.

Predetermination of Sex.—The German medical society organized at Berlin for research on sexual science and eugenics has offered a prize of 1,000 marks for the best article on the subject, "Has Man Two Kinds of Spermatozoa?" The question is to be studied by the light of modern views on predetermination of sex. The secretary of the society is Dr. M. Hirsch, Motzstr. 34, Berlin.

Poisoning from Beans.—The German medical journals state that Professor Lewin of Berlin warns that beans should not be allowed to be imported that contain more than 20 mg. hydrocyanic acid in 100 gm. of the beans. There have been several cases of vomiting and diarrhea keeping up for ten or twelve hours after ingestion of imported beans of the *Phaseolus lunatus* family. This includes butter, sugar and lima beans and the bitter or Egyptian bean.

Personal.—A gold medal and 5,000 francs, representing the Lannelongue prize, was awarded recently by the French Society of Surgery to Dr. H. Gaudier of Lille, for his pioneer work in the excision and immediate suture of war wounds. ——Dr. Léon Bernard, professor of medicine, Faculty of Medicine, Paris, has been elected a member of the Academy of Medicine, and Drs. Lesbre, Lyons, and Lignières, Buenos Aires, have been elected corresponding members. ——Prof. Thomas Swale Vincent has been appointed to the university chair of medicine tenable at the Middlesex Hospital Medical College, London.

Deaths in the Profession Abroad.—Dr. **W. Busse,** professor of gynecology at the University of Jena, aged 46.——Dr. **H. Weicker,** physician in chief of the Göbersdorf sanatorium. ——Dr. **P. Mayet** of Berlin, a statistician and writer on social hygiene. He is credited with the initiative for the government pension now granted to parturients.——Dr. **L. Pinatelle,** formerly professor of surgery at the University of Lyon, aged 46.—Dr. **Cecil Rupert Chaworth Lyster,** director of the radiotherapeutic department of Middlesex Hospital, London, died, January 26, from the effects of roentgen-ray burns for which repeated operations had been performed.

Tribute to the Heroes in the Profession During the War.—A subscription has been opened under the auspices of all the medical schools and organizations of France to collect funds to honor the memory of the medical victims of the war. It is planned to issue a souvenir volume, the Livre d'or, to contain the names and citations of all the physicians and medical students who died for France, in whatever service they may have been engaged. Dr. Caboche, 372 rue Saint-Honoré, Paris, is in charge of this part of the work, collecting private data to control the state archives. A copy of the volume will be presented to every one who subscribes at least 40 francs. A monument is also planned and subscriptions are being received for this purpose throughout France. The treasurer general is Dr. Bongrand, 6 rue Villaret-de-Joyeuse, Paris.

Foreign Guests Visit the United States.—At the invitation of members of the National Board of Medical Examiners, who visited England and France during 1919, several prominent physicians from abroad will visit America and make a tour of the country and attend the annual meeting of the American Medical Association in New Orleans. These guests are:

Sir Humphrey Rolleston, F.R.C.P., London; appointed by the president of the Royal College of Physicians, London.

Col. H. J. Waring, F. R. C. S., London; appointed by the president Royal College of Surgeons, England. Representing Conjoint Board of England.

Dr. Norman Walker, Edinburgh, representing the Triple Qualification Board of Scotland.

Professor Gregoire, surgeon, and Professor Roussy, physician; appointed by the dean of the faculty of medicine, University of Paris.

This commission will be joined by Prof. J. C. Connell, Kingston, Ontario, president of the Medical Council of the Dominion of Canada.

Merger of French Journals of Gynecology.—It is announced that a new journal, to be entitled *Gynécologie et Obstétrique,* is to be issued as a merger of the three leading French journals in this field. It takes the place of the *Archives mensuelles d'Obstétrique et de Gynécologie* which Bar and Faure have been guiding so long and which in turn was the successor of the *Obstétrique;* also of the *Revue de Gynécologie,* Pozzi's handsome journal which stopped with the war and his death, and of the *Annales de Gynécologie et d'Obstétrique,* the directors of which included Pinard, Hartmann and Pollosson, with Couvelaire and Lecène in charge. The new journal is to appear monthly, to be issued by Masson et Cie, 120 boulevard Saint-Germain, Paris. The subscription is 50 francs. All the three journals which it succeeds have been regularly indexed in the Current Literature department as they were issued, practically since the department was founded.

LATIN AMERICA

Influenza Epidemic in Panama.—Influenza has assumed an epidemic form in Panama, and the hospitals of Colon are filled with patients.

Epidemic of Meningitis in Havana.—The epidemic of cerebrospinal meningitis in Havana continues to spread. During the last few days a number of deaths have occurred among the personnel of the Cuban navy.

Personal.—Prof. B. A. Houssay of the University of Buenos Aires has been elected corresponding member of the Société de Pathologie exotique at Paris in token of appreciation for his extensive research on snake venom and on scorpion and spider poisons.

Deaths in the Profession.—Dr. **J. J. Mon** of Buenos Aires, hospital physician and writer, aged 40.——Dr. **F. Castro Rabello Kock,** professor of therapeutics at the University of Bahia and official of the state public health service, aged 39. ——Dr. **J. de Verney Campello,** professor of microbiology at the University of Rio de Janeiro, aged 37.——Dr. **A. de Arruda Beltrão,** a prominent physician at Rio de Janeiro and official health officer, aged 54.——Dr. **E. J. Corbellini,** formerly *profesor suplente* of surgery in the University of Buenos Aires, *consejero* of the university and a leading surgeon of the capitol, aged 47.

Government Services

Changes in Public Health Service

The President has sent to the Senate the nominations of former Surgeon-General Rupert Blue and Joseph H. White to be assistant surgeon-generals at large of the public health service.

Disease Conditions in the Army

For the week ending March 5, a few cases of influenza were reported from nearly all of the large camps and stations. At Camp Taylor the epidemic appeared to be subsiding much more slowly than at other camps, the personnel at this camp being nearly twice as large as at any other. The whole epidemic is considered at an end, so far as it affects the military service.

Influenza in the Navy Personnel

The influenza epidemic of 1920 affected the Navy as it did the civilian population. The recurrence began during the week ending January 17 at Great Lakes, Ill. On January 12 there were fifty-one cases. The peak was reached on the third day with the admission of 182 new cases during twenty-four hours. Although the peak came earlier than in the 1918 epidemic, the decline was less rapid and there were four secondary peaks, the outbreak terminating on the twenty-fourth day. It is reported that on the whole the epidemic was less severe and the cases milder during 1920 than during 1918. Pneumonia was a complication in about 10 per cent. of the reported cases of influenza. In addition to the epidemic at Great Lakes, which included in all 1,415 cases, there were 3,354 cases in other stations.

European Health Conditions

Surgeon-General Hugh S. Cumming, U. S. P. H. S., returned from his duties in Europe, where he has been stationed for two years, to assume his new position in Washington, March 10. Dr. Cumming says that typhus is far from being checked and seems to be increasing, so that there is imminent danger of an epidemic raging over Europe on a large scale, unless the most strict quarantine and other control measures are enforced. With the disease entrenched in European ports, the next danger point will be the United States, and he believes that nothing should be left undone to keep out this disease as well as bubonic plague. An agency is soon to be established under the League of Nations which will coordinate and strengthen the health work of all nations and will particularly improve the reporting of diseases and maintenance of international quarantine. April 12, a meeting is to be held in London, to which representatives of the health departments of various nations have been invited, when it is believed a permanent organization will be formed.

Contract Surgeons Under Army Reorganization Bill

Pressure is being brought to bear on members of the House of Representatives for recognition in the Army reorganization bill of former contract surgeons of the Army. The Army bill as it was reported to the House fails to credit contract surgeons and assistant surgeons for their service in the Army, which service in part determines their claim for longevity pay and retirement. The Army reorganization bill now pending in the Senate gives full credit to contract surgeons for their service in the Army, but the Army reorganization bill pending in the House is silent with reference to such recognition for contract surgeons. It is the general feeling that contract surgeons have not received justice in the House bill nor been accorded the recognition which is due them. When the American soldiers went to the Philippines and later to China the greater part of the work of the medical department was performed by acting assistant surgeons. It was seldom if ever that a regular medical Army officer was at that time on active duty with troops.

The War Department asked for volunteer acting assistant surgeons to meet the demand for medical officers. Physicians who thus entered the service signed a contract with the surgeon-general to perform the duties of a first lieutenant. Technically, however, such physicians were not army officers but were termed contract surgeons, although they performed the duties and were exposed to the hardships of the regular medical officer in the Army. As it does not seem likely that the House bill can be amended at this late time, it is felt that the Senate committee on military affairs will insist on recognizing the claims made in behalf of the contract surgeons.

Foreign Correspondence

LONDON

Feb. 21, 1920.

The Prevention of Venereal Disease

The prevention of venereal disease is still a burning topic. A largely attended public meeting, convened by the Society for the Prevention of Venereal Disease, has been held at the Mansion House under the presidence of the lord mayor. A resolution was carried unanimously that venereal disease had become a menace to national health and prosperity, and in view of the fact that infection can be prevented by self-disinfection immediately after exposure, it is necessary to instruct the public as to the importance and method of doing this. These instructions for immediate self-disinfection have been issued by the society: Materials required: cotton wool; a solution of potassium permanganate, in 1:1,000; calomel ointment, 33 per cent. (A) If exposure takes place outdoors or where complete disinfection is impracticable: (1) Make water. (2) Soak a swab of cotton wool with the solution. Draw back the foreskin, carefully swab the head of the penis and undersurface of the foreskin, especially at the opening of the pipe. These steps must be taken within an hour of exposure. (3) On returning home, thoroughly wash the sexual organs with soap and water and well rub the ointment into the penis, drawing back the foreskin. This must be done within six hours of exposure. (B) If exposure has taken place within doors, a more complete immediate disinfection should be made: (1) Make water. (2) Wash the sexual organs and parts around with soap and water. (3) Swab with the solution. (4) Rub the ointment well into the penis. The swabbing with the permanganate is the most important measure. An additional safeguard is to apply the ointment before intercourse. If exposure has occurred under the influence of alcohol, so that the precautions recommended have not been promptly taken, the chances of infection may be considerably lessened by carrying out "B," well rubbing in the ointment for ten minutes and in addition syringing the pipe with permanganate solution of half the strength recommended for the outside, and holding the solution in for two minutes by pinching the lips of the pipe. This method is useless after twelve hours. If none of these precautions have been taken, and there is reason to believe that infection is probable, a physician should be consulted at once.

The subject has also been considered by the Medical Women's Federation, which has issued a pamphlet stating that the chief and most important part of the task with which society is faced is such a reform of our social structure and moral habits as will gradually eliminate conditions which have led to the prevalence of venereal disease. In regard to prophylaxis, the federation associates itself with the findings of the interdepartmental committees on infectious diseases in connection with demobilization. The committee found that even under the conditions of discipline of men on active service, the "prophylactic packet system" was a failure. The provision of clinics open at all hours of the day and night for early preventive treatment so that sterilization may be carried out within a short time of the act is also condemned as encouraging and countenancing promiscuous intercourse. "The sale by chemists of calomel ointment or permanganate solution is a matter with which we have no concern as long as the public is aware that these things are not remedies for venereal disease."

Graduate Teaching Units

The reorganization of the teaching of several of the London hospitals by the formation of medical and surgical units under directors who, with their assistants, are entirely engaged in this work, has been described in previous letters to THE JOURNAL. An incentive to this reform is the fact that educational grants toward the expense can be obtained from the government. The London School of Tropical Medicine, the teaching of which is entirely graduate, is also adopting

the scheme. Whole-time directorships have been instituted in protozoology, helminthology, entomology and tropical pathology.

War Section of the Royal Society of Medicine

An innovation at the Royal Society of Medicine has been the formation of a war section. At the first meeting a discussion on gas poisoning in warfare was opened by Sir Wilmot Herringham, who described his introduction to this method when in April, 1915, he came across three French (Algerian) soldiers in a Canadian ambulance suffering from the effects of chlorin gas sent over by the Germans in the form of clouds or drifts. Three days later he found 600 or 700 men in hospital at one center, all suffering from its effects. They were gasping for breath, coughing, and expectorating yellow, frothy fluid, which often ran out of their mouths when they lay on their sides. No treatment seemed to avail. The method of using oxygen customary in pneumonia was not of the slightest use. Experiments were immediately made in England to elucidate the pathology, and it was shown that the chief symptoms might be explained by the difficulty of oxygen entering the blood through the great wall of edema. The mainstay of treatment was oxygen, which was administered at first by a makeshift apparatus of gasoline tins until Dr. Haldane's apparatus became available. It appeared that as far back as 1909 the Germans were preparing to use gas in war. In that year a research chemist from this country, who periodically visited Germany, was walking in the country when he detected a strange odor. He came to a small hill on which were soldiers and some sheep, of which several appeared to be dead. He was not allowed to go farther. Evidently he had come on some poison gas practice for military purposes.

Prophylactic Inoculation Against Influenza

Sir William Leishman, director of pathology at the War Office, has published the first records of the results of prophylactic inoculation against influenza according to the method described in a previous letter:

		Ratio per Thousand		
	Number of Men	Incidence of Attack	Lung Complications	Deaths
Inoculated	15,624	14.1	1.6	0.12
Noninoculated	43,520	47.3	13.3	2.25

Not only do these figures show a great advantage for the inoculated, but there is the additional fact that nearly one half of them received only a third part of the dose considered necessary.

A Majority of Women on the General Health Council

The Consultative Council on General Health Questions, established under the Ministry of Health, has held its first meeting. Dr. Addison, who presided, asked the council to put before him a statement of the main defects in existing provisions for safeguarding the health of the people, and to suggest remedies from the standpoint of the general public. Women form a large majority of the council and represent a number of trade organizations, such as the United Textile Factory Workers, the Women's Cooperative Guild, the National Council of Women of Great Britain and Ireland, and the Labor Party.

War Patients Still in the Hospital

Impressed by the fact that many medical and surgical cases have remained in military hospitals beyond the period when benefit is being derived, the medical authorities of London district have appointed a board of consultants to investigate the matter. They will visit the hospitals and advise the best method to be adopted for the patient's recovery and disposal. The board will consist of Col. H. J. Waring, president (surgeon); Major W. E. Wynter (physician); Capt. C. M. Hinds Howell (neurologist), and Col. T. H. Openshaw (orthopedic surgeon).

Election of Honorary Fellows of the Royal College of Surgeons

A. Depage, Brussels; Pierre Duval and A. Gosset, Paris; J. M. T. Finney, Johns Hopkins University, and Charles H. Mayo, Rochester, Minn., have been elected honorary fellows of the Royal College of Surgeons. It is hoped that they may be able to attend the meeting of the council in July for the presentation of diplomas.

VIENNA

Feb. 24, 1920.

Death of Professor Wertheim

A few days ago, Professor Ernst Wertheim, the famous gynecologic surgeon, died rather suddenly from the effects of an attack of the so-called influenza, which at present is prevalent in Vienna. He was only 58 years of age. Wertheim's reputation was worldwide, and there will be a large number of men in the United States who will regret to hear of his death. His chief line of work was the surgical treatment of cancer of the uterus, and his method of operation was at one time regarded as the best operation for this disease. Wertheim was a critical and exact scientist. As an operator he was bold and original, and as a teacher he was unique. With his death, which followed so soon after the death of Professor Schauta, there has occurred a rare condition in the University of Vienna. Both clinics for diseases of women are now free as both directors are dead. It will be difficult to find two suitable men to fill the vacancies. In Austria there is just now no abundance of such men, as no physician from Germany will at present be willing to come to Vienna, which does not offer much financial attraction. On the other hand, only a first-class man, who is able to teach and to do research work, can be appointed to this important post.

Influenza and Lethargic Meningitis in Vienna

At present a wave of influenza (grip) is raging in Vienna, which is not quite as bad as last year, and is distinctly different in its clinical manifestations. A new feature of the disease besides the well-known complications of the lungs and the brain is a spasmodic condition of the intestines, as reported by Dr. Massery in a paper read recently before the Medical Society of Vienna. He has seen six patients in the Samaritan Hospital who, when first seen, showed a condition resembling most closely acute strangulation of the intestine, severe pains all over the abdomen, spasms, and continual and absolute constipation. Pulse and temperature, however, remained not far from normal. Operation proved that the occlusion was due not to an obstacle, but to severe spasms of the intestinal muscles. Two cases could not be saved; death was probably due to the spasmophilic condition so often observed in cases of grip.

Another group of cases showed complications of another type of spasms; these resembled chorea. Spasms occurred in different groups of muscles, the flexors or extensors of the limbs, or of the abdominal walls. The patients were delirious, the temperature rose to 40 C. and higher and severe somnolence was always present. Seventy-one cases, of which thirty-one were fatal, were reported by Dr. Dimitz, from the neurologic clinic, at the above-mentioned meeting. The postmortem findings showed only a more or less marked hyperemia and sometimes edema of the brain, chiefly in the lenticular region. Similar epidemics appeared in various towns of Austria, lasting six weeks altogether. Lethargic meningitis is now also often observed. The patients are mostly young or middle aged persons (12 to 50 years); the mortality is rather high—20 per cent.—as etiologic treatment has not yet been possible. Pneumococcus serum seems to have a beneficial influence.

Medical Men Strike

The political weapon, the strike, which so often has been adopted with more or less success in economic warfare between capital and labor, has now been taken up, for the first time in this country, by medical men anxious to secure a modest living. The first strike was arranged by physicians of the "Krankenkasse" or sickness insurance society, who demanded an increase of their moderate fee at the rate of trebling their antewar fee. It must be added that at present the cost of living is forty times as great as before the war. As these physicians devote only part of their time to this "panel" work, their demands have been low. Hitherto the "Krankenkasse" has refused the new rate of remuneration, and so the medical men no longer treat the members on the old terms but as private patients. Public feeling is in favor of the physicians, so the result is not doubtful. A similar "difference of opinion" has sprung up in our clinics. Hitherto only the assistants and two house physicians were paid in the clinics. All other physicians, the outpatients' assistants as well as other physicians working in the clinics and, so to speak, making the thing "run," were working gratuitiously. Now the enormous cost of living is so heavy that these men, too, demand from the board of education, to whom the

clinics belong, a moderate remuneration and free board. As the work of these doctors is indispensable for the good working order of the clinics and since the government has refused to comply with the wishes of the men, they applied to the "Medical Organization," comprising 99 per cent. of all medical men of Vienna, for help. The organization proclaimed, after futile negotiations, a clinical strike, which lasted only a few hours. They attained their object. The leading rule in the new understanding is: "No work without payment, but only those men will be admitted whose work is required for the clinics, and the number will be restricted to the actual needs."

PARIS

Feb. 12, 1920.

Symbiosis, a Biologic Theory

A book that appeared recently entitled "Les symbiotes" has awakened a lively discussion. The personality of the author has been known for many years in the scientific world. The name of the author in question is Paul Portier, "maitre de conférences" on the Faculté des sciences de Paris and professor at the Institut océanographique, who took a prominent part in the investigations of Prof. Charles Richet on anaphylaxis. The above mentioned work would overthrow completely the ideas heretofore entertained concerning the rôle of microbes. To be sure, it was already known that all microbes are not pathogenic and that certain phenomena of life depend on the existence of bacteria. But the theory of Portier has a much more general application, for he states that every living cell is composed in reality of two cells that are associated in symbiosis; the human organism must be regarded, then, as the host of innumerable microbes dwelling in the protoplasm of the cells. The presence of the symbionts is constant and necessary, Portier thinks; without them life would be impossible. All the phenomena of intercellular organic changes, and more especially the phenomena of intercellular synthesis depend, accordingly, on the symbionts. The phenomena of "deficiency," which in recent times have attracted attention to the consideration of the interesting subject of vitamins, would likewise be explained, it is maintained, by the rôle of the symbionts. They play a part, it would seem, in the process of fecundation, in experimental and physiologic parthenogenesis, and also in the phenomena of immunity. Portier has succeeded in isolating and cultivating the symbionts, which are nothing more than the elementary structures of the cells and the blood described by the biologists under such names as "mitochondrias" and "globulins." However, it is only proper that I should add that this biologic theory has been attacked by Auguste Lumière of Lyons, who has written a book entitled "Le mythe des symbiotes" (The Myth of the Symbionts).

Physicians as Affected by the Tax on War Profits

A law dated July 1, 1916, put a special tax on war profits. It has been an undecided question whether physicians were subject to this tax. The matter has now been threshed out before the Conseil d'Etat, where a physician upheld the view that this special tax affected only those engaged in industrial and commercial pursuits. The counsel of the physician pleaded that it was not the intention of the law to include the professions, and much less the medical profession, which is bound by the right of privileged communication. But the minister of finance stated in reply that the text of the law would indicate that it applied in general to persons, subject to licensure, whose benefits and profits during the war exceeded those of normal times. The Conseil d'Etat, therefore, reached the decision that, in view of the general terms of the law, it was right and proper to tax all subject to licensure whose emoluments exceeded those that their profession normally produced, without making any distinction as to the nature of the profession and without considering the attitude usually taken toward the resources from which they derive their income. The decree adds that, even though it could be shown that the emoluments realized by certain persons thus included, by reason of the conditions under which they exercised their profession, would, of necessity, require a special limitation in the application of the law, such fact would not be of such a nature as to exonerate them completely. Consequently, the medical profession, which, according to the law of 1880, is subject to licensure, has been declared subject to the tax on war profits.

The Reorganization of Night Medical Service

So far the organization of night medical service in Paris has been anything but satisfactory. The present service dates back to 1876, and since that time it has undergone no changes by way of reform. The main features of the service as it has existed in the past were that, in each quarter of the city, physicians were asked to state whether they desired to respond to night calls or not. The names and the addresses of those who had signified a willingness to give night service in any given quarter of the city were inscribed in a directory which was kept at the police station of that quarter. The person who was in need of a physician at night went to the police station, and a policeman was delegated to accompany such person to the home of the physician and also went with the physician to the home of the patient. When the physician had finished his visit, the policeman gave him an order on the prefect of police for 10 francs. It is almost needless to say that this mode of service was primitive. The fact of having accepted night service did not put the physician concerned under any obligations to stay at home nights in anticipation of a call; so that it often happened that the physician to whom the delegated policeman and the person in need of medical assistance went was not at home. It thus became necessary to call on another physician, who might also be away as was the first. In view of the weaknesses of the old system, an endeavor has been made to reorganize the service with the following two prerequisites as a basis: 1. It was realized that in order to make a night medical service effective it would be necessary that certain physicians should be "on call" during the entire night and ready to render service to any patients who were in urgent need of attention. 2. It was equally apparent that the service should be organized in such a manner that physicians could be summoned quickly and also be in a position to reach the patient promptly.

With these ideas in view, the old system by which the names of physicians willing to do night service were inscribed in a special directory has been abolished, and a panel of physicians selected by a competitive examination and directly subject to the authority of the prefect of police has been established. These physicians so selected will serve for three years, at most, and will receive a fixed annual compensation of 3,000 francs. The city of Paris has been divided into five sections, in each of which a physician will be found (when not otherwise on duty) from 10 p. m. to 7 a. m., from October 1 to March 31, and from 10 p. m. to 6 a. m., from April 1 to September 30, at the disposal of patients who make request for medical service at night. The office of such physicians will be at a police station centrally located. A room with a bed will be provided, so that physicians will have the opportunity of resting, if they so desire, when not on active duty. A request for a physician is made at the nearest police station, which immediately communicates the request by telephone to the central police station. An automobile is sent to convey the physician to the residence of the patient and back to his post of duty. Each automobile used for this purpose is provided with a first-aid medical chest containing a small supply of drugs and surgical instruments. The night service is so organized that a physician is on duty only one night out of six. Each physician will therefore be on duty sixty nights a year, so that with 3,000 francs per year he will be receiving 50 francs for each night that he serves. This compensation is sufficient to secure the services of young physicians who have not an established practice as yet. The regulations provide that physicians serving on this panel shall be under 30 years of age, though former hospital interns may be up to 35.

Marriages

ALVAN LOTHAIR CHAPMAN, Hermanville, Miss., to Miss Mary Belle Hollingsworth of Crystal Springs, Miss., February 28.

JEROME J. ROBBINS, Gulfport, Fla., to Mrs. Elizabeth Tabor of Hubbardston, Mich., at Gulfport, recently.

ROBERT WILLIAM O'DONNELL, Monroe, La., to Miss Jennie May Conway of Shreveport, La., February 19.

G. C. MCCLURE, Ball Ground, Ga., to Miss Pearl Gober of Dawsonville, Ga., at Atlanta, February 25.

MYER NORMAN MOSKOVICH, St. Paul, to Miss Elizabeth Garfinkel of Philadelphia, January 5.

LYMAN JACKLIN SPALDING, New York City, to Miss Dorcas Parker of Bryan, Texas, recently.

Deaths

Louis Anatole LaGarde, Col., M. C., U. S. Army (retired); while returning from attendance at the meeting of the National Board of Medical Examiners in Chicago, was stricken with cerebral hemorrhage, March 7, and died just as the train was entering Pittsburgh. Colonel LaGarde was born in Bayou La Fourche, La., April 15, 1849, and after attending the Louisiana Military Academy, was graduated from Bellevue Hospital Medical College in 1872. After his internship in Roosevelt Hospital he entered the Army as contract surgeon in 1874, and served during the Sioux War. He received his appointment in the Army as first lieutenant and assistant surgeon, June 6, 1878, and then served on frontier duty for twenty years, during which time he was promoted to captain and major. In 1892 and 1893, he was detailed by the War Department to test the new rifle for the Army. During the war with Spain, he was in command of the divisional reserve hospital of the Fifth Army Corps at Siboney, Cuba, and was in charge of the evacuation of sick and wounded to northern hospitals, until he was stricken with yellow fever. Since 1899 he has been professor of military surgery in the University of the City of New York, and was also lecturer on gunshot wounds and ophthalmology in the Army Medical School from 1901 to 1902. In 1903 and 1904, Colonel LaGarde was made president of the board to determine the stopping power of bullets for pistols and revolvers with a view to a more effective service weapon. From 1904 to 1905, he was superintendent of the Ancon (Canal Zone) Hospital, and from 1905 to 1908, was the chief surgeon of the Department of the Visayas, Philippine Division, and while on this detail was made lieutenant-colonel and deputy surgeon-general. He was then made chief surgeon of the Department of Colorado, was promoted to Colonel, M. C., Jan. 1, 1910, and was retired by operation of law, on attaining the age of 64, April 15, 1913. Since that time Colonel LaGarde has been active as superintendent of the National Soldiers' Home, Washington, D. C., and as a member and treasurer of the National Board of Medical Examiners. He was recalled to active service during the World War, and in addition to his other duties delivered lectures on the medical reserve corps, and on military surgery at various medical colleges, throughout the country. He was an authority on ballistics, and his work on gunshot wounds was a standard textbook up to the time of the World War. He was a Fellow of the American Medical Association and in 1903 was a member of the House of Delegates representing the Army. He was also a charter member of the Association of Military Surgeons of the United States, and served for a time in 1918 as interim treasurer and editor of the *Military Surgeon*. Colonel LaGarde was a Southern gentleman of the old school, a charming companion and a most delightful personality.

Kenneth Alexander J. MacKenzie ⊕ Portland, Ore.; McGill University, Montreal, 1881; aged 61; L.R.C.P. and L.R.C.S. (Edin), 1882; second vice president of the American Medical Association in 1905, a member of the House of Delegates in 1904, 1912 and 1913, and chairman of the committee of arrangements for the Portland meeting; a fellow of the American Surgical Association; president of the Portland Academy of Medicine in 1909 and 1910; once president of the Oregon State Medical Association, and Portland City and County Medical Society; captain, M. C., U. S. Army, and discharged, Jan. 31, 1919; aide to the governor of Oregon under the Selective Service Act; professor of theory and practice of medicine from 1887 to 1907, professor of operative and clinical surgery since 1917, and dean of the faculty of the University of Oregon since 1912; surgeon to St. Vincent's Hospital, Portland, since 1883; chief surgeon for Oregon and Washington of the Oregon Railroad and Navigation Company since 1895; a director of the United States National Bank; head of the relief corps of physicians and nurses at the time of the San Francisco fire and earthquake, and in charge of the Harbor View relief station; and medical director of the Lewis and Clarke Exposition; director of the Portland Free Dispensary; died, March 15, from heart disease following influenza.

Charles Knox Cole, Chelsea-on-Hudson, N. Y.; Miami Medical College, Cincinnati, 1879; aged 67; at one time president of A. Schrader's Son, Inc., Brooklyn, the largest manufacturers of submarine divers' apparatus in the world; founder and director of the Rocky Mountain Club in New York City; for many years a prominent figure in Montana, where he was a member of the city council of Helena, president of the Montana Senate, president of the state board of examiners, and chief surgeon of the Montana Central Railway; president of the American Academy of Railway Surgeons in 1894, and secretary and treasurer of the American Association of State Examining and Licensing Boards in 1892; died in Pasadena, Calif., March 1.

William King Rogers ⊕ Columbus, O.; University of the City of New York, 1889; aged 53; a member of the American Academy of Ophthalmology and Oto-Laryngology; American Ophthalmological Society, and American Otological Society; professor of otology in the Medical Department of the Ohio State University, Columbus, since 1900; attending surgeon to Mt. Carmel, and St. Francis hospitals, and consulting surgeon to the Children's Hospital, Columbus; formerly president of the Ohio State Board for the Relief and Benefit of the Needy Blind; died in Mt. Carmel Hospital, Columbus, February 27, from septicemia.

Herbert William Yemans ⊕ Major, M. C., U. S. Army, Alcatraz, Calif.; Detroit, Mich., Medical College, 1878; aged 62; a member of the Association of Military Surgeons of the United States; an officer of the United States Marine Hospital Service from 1882 to 1887, and from 1892 to 1894; contract surgeon, U. S. Army since 1903; formerly a member of the council of the Manila Medical Society and Philippine Islands Medical Association; an expert on Esperanto; who was retired from the Army recently on account of physical disability; died at Fort Rosecrans, Calif., January 29.

George Clarke Ober, Washington, D. C.; Georgetown University, Washington, D. C., 1882; aged 59; a member, secretary, and once first vice president of the Medical Society of the District of Columbia; from 1891 to 1903 professor of materia medica and therapeutics and later of practice of medicine in the National University; for nine years secretary and later president of the District Board of Medical Examiners; formerly president and for four years secretary of the Board of Medical Supervisors for the District; died in Providence Hospital, February 25, from erysipelas.

Thomas Amory DeBlois, Boston; Dartmouth Medical School, Hanover, N. H., 1878; University of the City of New York, 1878; aged 72; a member of the Massachusetts Medical Society; a member and once vice president of the American Laryngological Association; a graduate of the United States Naval Academy in 1868; laryngologist and surgeon to the Boston City Hospital; instructor in laryngology at Harvard University Medical School; Lieutenant-Commander and Surgeon of the Naval Brigade, Massachusetts Volunteer Militia; died about February 29.

Joseph Eddy Clark, Utica, N. Y.; Harvard University Medical School; a member of the Medical Society of the State of New York and the Massachusetts Medical Society, 1882; a specialist in diseases of the nervous system; for twelve years in charge of the Vanderbilt Clinic, New York City; for several years chairman of the Board of Health of Medford, Mass.; since 1914, sanitary supervisor of the New York State Department of Health for Oneida, Herkimer and Madison counties; died in the Utica General Hospital, March 4.

Peter Lawrence Schenck, Brooklyn; College of Physicians and Surgeons in the City of New York, 1865; aged 76; a member of the Medical Society of the State of New York; a life member of the American Academy of Medicine; acting assistant surgeon U. S. Army during the Civil War; medical superintendent to Kings County Hospital from 1872 to 1881, and consulting surgeon to the institution from 1882 to 1914; visiting physician to the Kings County Penitentiary from 1889 to 1905; died March 6.

William Edwards, Bowdle, S. D.; College of Physicians and Surgeons, Keokuk, Ia., 1873; Northwestern University Medical School, Chicago, 1875; aged 70; a member of the South Dakota State Medical Association and a life member of the Mayo Surgeons' Club; president of the Board of Councillors of the State Medical Society; first mayor of Bowdle; state senator in 1892 and later a member of the state board of health; died, February 8, from carcinoma of the stomach.

Gustav Adolph Thiede, Baltimore; Maryland Medical College, Baltimore, 1901; aged 47; a member of the Medical and Chirurgical Faculty of Maryland; formerly health warden, and school inspector of Baltimore; for thirteen years assistant surgeon to the Presbyterian Eye, Ear and Throat Hospital; then for twelve years health warden of the city and later inspector for four years; died February 16.

⊕ Indicates "Fellow" of the American Medical Association.

William Arthur Wade, Murray, Utah; St. Louis College of Physicians and Surgeons, 1888; aged 73; for many years a pharmacist and a member of the first state board of pharmacy; an examiner for the first medical board of Utah; formerly local surgeon to the San Pedro, Los Angeles, and Salt Lake and Rio Grande Western railroads; at Payson, Utah; died February 23.

George Turner Meacham, Taylorville, Ill.; Rush Medical College, 1893; aged 49; Lieutenant, M. R. C., U. S. Army, and discharged January 11, 1919; a member of the Illinois State Medical Society; formerly an alderman of Taylorville; died, March 8, from the effects of carbolic acid self-administered, it is believed, with suicidal intent, while despondent on account of ill health.

Silas Blaisdell Hull ✠ Asst. Surg., Lieut., M. C., U. S. Navy, Brooklyn, N. Y.; Long Island College Hospital, Brooklyn, 1916; aged 24; who served for two years in foreign waters in the mine sweeping service; a member of the Association of Military Surgeons of the United States; physician for the National Bank of Commerce, Brooklyn; died, March 6, from encephalitis.

Albert F. Koetter ✠ St. Louis; Missouri Medical College, St. Louis, 1892; aged 48; a member of the American Otological Society; instructor in otology in Washington University and chief of the ear clinic of O'Fallon Dispensary; aurist to the Evangelical Deaconess Hospital; once president of the St. Louis Medical Society; died in Barnes Hospital, St. Louis, February 28.

Samuel Richard Guthrie, Franklin, Ky.; Vanderbilt University, Nashville, Tenn., 1913; aged 32; a member of the Kentucky State Medical Association; Captain M. R. C., U. S. Army, with service in the British Army from 1917 until the close of the World War; and discharged July 9, 1919; died at the home of his parents in Franklin, February 21, from pneumonia.

Flavel Shurtleff, Pekin, Ill.; Rush Medical College, 1865; aged 78; assistant surgeon of U. S. Volunteers during the Civil War; from 1877 to 1891 county clerk of Tazwell; for twenty years one of the publishers of the *Pekin Times;* vice president of the Farmers National Bank for many years and a director in the Herget National Bank, Pekin; died February 24.

Henry A. Newbold, Philadelphia; University of Pennsylvania, Philadelphia, 1893; aged 74; demonstrator of practical pharmacy in the University of Pennsylvania; assistant in nervous diseases in the University and Polyclinic hospitals; a committing physician for the psychopathic ward of the Philadelphia Hospital; died, March 3, from arteriosclerosis.

Charles Philip Henry, Philadelphia; University of Pennsylvania, Philadelphia, 1882; aged 59; assistant surgeon, U. S. Navy, and retired Dec. 20, 1889, on account of incapacity resulting from an incident of service; a noted linguist; head of the Latin department of the Catholic High School for Boys, Philadelphia; died, February 26, from pneumonia.

Hosea Ballou Burnham, Manchester, N. H.; Vermont Medical College, Woodstock, 1853; aged 90; a member of the New Hampshire Medical Society; formerly consulting physician to the Elliot Hospital, Manchester, and physician to Rockingham County House of Correction and Insane Asylum; died February 29.

Alique C. Matchette, Bourbon, Ind.; Northwestern University Medical School, Chicago, 1863; aged 82; surgeon of United States Volunteers during the Civil War, and chief surgeon of the military division of West Tennessee; secretary of the local board of health for twenty-five years; died February 16.

William Alhanan Smith, Springfield, O.; Cincinnati College of Medicine and Surgery, 1877; Bellevue Hospital Medical College, 1883; aged 68; a member of the Ohio State Medical Association; a member of the medical staff of the Springfield City Hospital; died, February 25, from heart disease.

Charles Edgar Blanton, New Market, Ala.; Vanderbilt University, Nashville, Tenn., 1882; aged 66; a member of the Medical Association of the State of Alabama; for several terms president of the Madison County Medical Society; died, February 20, from pneumonia.

Walter H. Parcels, Lewistown, Pa.; Medical College of Ohio, Cincinnati, 1873; aged 71; a member of the Medical Society of the State of Pennsylvania; a veteran of the Civil War; twice representative in the state legislature from Mifflin County; died February 2.

Albert D. Marks, La Mesa, Calif.; College of Physicians and Surgeons, Baltimore, 1885; aged 69; died, February 18, from the effects of a stab wound of the heart believed to have been self-inflicted with suicidal intent, while despondent on account of ill health.

William Allen Deas, Richmond, Va.; Medical College of Virginia, Richmond, 1879; aged 85; a member of the Medical Society of Virginia; formerly coroner of Henrico County, and physician at the Soldiers' Home; died in Williamsburg, Va., February 17.

Henry Leo Keyes Carey, New York City; Eclectic Medical College of the City of New York, 1894; Bellevue Hospital Medical College, 1897; aged 52; for fifteen years examining physician for tuberculosis in the Department of Charities; died March 6.

Willis W. Munson, Otisco, N. Y.; George Washington University, Washington, D. C., 1869; aged 79; a veteran of the Civil War; once president of the Onondaga County Medical Society; died in the Soldiers' Home, Bath, N. Y., February 28.

H. A. Moorman, Owenboro, Ky.; Louisville, Ky., Medical College, 1889; aged 76; a member of the Kentucky State Medical Association; for many years president of the Sacramento, Ky., Deposit Bank; died, February 24, from heart disease.

John W. Dulaney, Greenwood, Miss.; Tulane University, New Orleans, 1873; aged 73; a member of the Mississippi State Medical Association; died in St. Joseph's Hospital, Memphis, Tenn., March 2, after an operation for appendicitis.

Thomas Elwood Taylor ✠ Denver; University of Michigan, Ann Arbor, 1879; aged 64; professor of obstetrics in the University of Colorado, Denver and Boulder, and later emeritus professor; died, February 2, from cerebral hemorrhage.

Leonard Frederick Schmauss ✠ Alexandria, Ind.; Rush Medical College, 1897; aged 52; while driving his automobile across the Big Four tracks, two miles north of Alexandria, February 27, was struck by a train and instantly killed.

Samuel B. Flynt, Meridian, Miss.; Memphis, Tenn., Hospital Medical College, 1898; aged 57; died in a hospital at El Paso, Tex., February 14, from injuries received in an automobile accident near Newman, N. M.

John M. Fitzgerald ✠ Clarion, Pa.; Western Reserve University, Cleveland, 1872; aged 71; once treasurer of the Clarion County Medical Society; died, February 27, from pneumonia following influenza.

Samuel Hunt, Jr., ✠ Knoxville, Tenn.; Vanderbilt University, Nashville, Tenn., 1914; aged 29; Lieutenant M. R. C., U. S. Army, with service in France, and discharged May 4, 1919; died February 23.

Charles John McGuire, Altura, Minn.; University of Illinois, Chicago, 1902; First Lieutenant, M. R. C., U. S. Army, and discharged August 9, 1919; died, February 25, from cerebral hemorrhage.

Elisha H. Coombs, Morgantown, W. Va.; Hahnemann Medical College, Philadelphia, 1860; aged 84; president of the Monongahela Valley Bank, Morgantown; died about February 19.

William Brown Maney, Nashville, Tenn.; University of Nashville, Tenn., 1856; aged 85; chief surgeon of the First Tennessee Infantry, C. S. A., during the Civil War; died February 22.

John B. Draper, Oswego, Kan.; Rush Medical College, 1868; aged 77; formerly surgeon of the State Soldiers' Home, Fort Dodge; a veteran of the Civil War; died about February 25.

Thomas R. Plumer, Farmington, Ill.; (license, years of practice, Illinois, 1873); a member of the Illinois State Medical Society; a practitioner for sixty years; died about March 1.

Charles Edwin Bleakley, Detroit; Michigan College of Medicine and Surgery, Detroit, 1889; aged 63; also a graduate of the Ontario College of Pharmacy; died February 25.

Edward Remson Seasongood ✠ Naper, Neb.; John A. Creighton Medical College, Omaha, 1910; aged 34; also a graduate in pharmacy; died, February 27, from pneumonia.

John Campbell Brewer, Lytton Springs, Tex.; Medical College of Georgia, Augusta, 1871; aged 72; a member of the State Medical Association of Texas; died February 3.

James F. Harris ✠ Ogden, Ill.; Kentucky School of Medicine, Louisville, 1877; aged 67; a member of the Illinois State Medical Society; died, February 28, from influenza.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Fraud on the Public and on the Profession

MORE MISBRANDED DRUGS

Boericke & Runyon Tablets.—In September, 1917, Edward A. Runyon, New York City, who traded as Boericke & Runyon, shipped some tablets in interstate commerce that were adulterated and misbranded. "Santonin and Calomel Tablets," labeled as containing ½ grain each of santonin and calomel to each tablet, were found, in fact, to have approximately only 0.402 grain santonin and 0.352 grain calomel to each tablet. "Acetanilid and Quinine Compound Tablets," labeled as containing ¼ grain caffein citrate and 1 grain of quinin sulphate in each tablet, were found to contain approximately only 0.201 grain caffein citrate and 0.842 grain quinin sulphate. Some 5 grain "Aspirin Tablets" were found on examination to contain no aspirin at all but to be composed of salicylic acid, milk sugar and talc. "Kali Hydroid Tablets" (potassium iodid) declared to have 1 grain of potassium iodid to each tablet, were found to have in fact only 0.566 grain potassium iodid. Some ¼ grain "Morphin Sulphate Tablets" contained in fact approximately only 0.071 grain morphin sulphate to each tablet. Runyon pleaded guilty to the charges of adulteration and misbranding and was fined $25.—[*Notice of Judgment No. 6551; issued Feb. 21, 1920.*]

Sulferro-Sol.—Sulferro-Sol, fourteen cases of which were alleged to have been shipped in February, 1918, by the Sulferro-Sol Co., Inc., Birmingham, Ala., was declared misbranded by the federal officials. It was charged that the claims made for the product "falsely and fraudulently represented it as a remedy for pellagra, dyspepsia, indigestion, anemia, chronic abscesses, and all forms of stomach, kidney, skin, blood and nervous troubles; whereas, in truth and in fact it was not." No claimant appearing for the property, the court ordered it condemned and forfeited and instructed that the stuff itself should be destroyed while the empty containers should be sold at public auction.—[*Notice of Judgment No. 6564; issued Feb. 21, 1920.*]

Santal Pepsin Capsules.—Augustus R. Kaylor and Clara J. Sadd, Bellefontaine, Ohio, who did business under the trade name Santal Pepsin Co., shipped in interstate commerce a quantity of "Santal Pepsin Capsules" in May, 1917. When analyzed by the Bureau of Chemistry these were found to consist of soft gelatin capsules containing about 10 grains of a mixture of santal oil, methyl salicylate, salol and a tablet containing pepsin. It was falsely and fraudulently claimed on the trade packages that the preparation was a specific for all kidney and bladder troubles, gonorrhea, gleet, inflammation of the ovaries, rheumatism, Bright's disease and a number of other conditions. In November, 1918, Kaylor and Sadd pleaded guilty and were fined $175 and costs.—[*Notice of Judgment No. 6569; issued Feb. 21, 1920.*]

Principles of Hygiene.—One of the main principles of hygiene is to bring about a consistent common-sense observance by individuals and communities of cleanly methods of living to prevent the erupted matter from the bodies of infected persons from being conveyed to and becoming "dangerous dirt" in the bodies of other persons. Another important matter is the establishment and maintenance of conditions in respect to air, water, food, exercise, and sleep, which tend to fortify individuals with vigorous health and the power to overcome invasion of the body by "dangerous dirt."—L. L. Lumsden, "Rural Hygiene," *Public Health Rep.*, Nov. 7, 1919.

Correspondence

THE NATIONAL FORMULARY, USEFUL DRUGS, AND THE COMING REVISION OF THE PHARMACOPEIA

By the federal Food and Drugs Act and by state acts, two books are made the official or legal standards for drugs and their preparations, namely, the Pharmacopeia and the National Formulary. The Pharmacopeia does not standardize all drugs and preparations. On the contrary, it is highly selective; and while at each decennial revision it has admitted some new and approved remedies and their preparations, it has also sought to eliminate from its pages those remedies that have failed to combine both worth and extensive employment. In the last revision it gained much by eliminating many of those preparations, formerly so much in vogue, that had a shotgun make-up or were combinations which forbade simplicity in prescribing.

The National Formulary, revised and issued by the American Pharmaceutical Association, is in a sense supplementary to the Pharmacopeia, for its drugs and preparations are those which have been discarded from the Pharmacopeia in the different revisions, together with some other compound preparations which are frequently prescribed or are extensively called for by the laity. In a large measure it is a book of convenience for the pharmacist, enabling him to furnish preparations of definite strength and uniformity for those physicians who still prescribe the discarded formulas of the Pharmacopeia or stick to the old-fashioned galenicals. In addition, since it can be depended on to some extent as a standardizer for the discards of the pharmacopeial revision, it gives added freedom to the pharmacopeial revisers in their design to exclude preparations not fully approved, even though much used.

As these two books are the legal or official standards, their drugs and preparations can be obtained of definite strength and uniformity of manufacture throughout the United States. It follows, then, that their preparations should be the ones preferred in prescribing. But who would care to memorize the Pharmacopeia or the National Formulary? It would be a waste of time and energy, for nearly all the matter in both books relates to tests for purity and identity, and the technic of manufacture. This is material for the supply houses and the pharmacists, to enable them to select drugs of high quality, and to manufacture preparations of uniformity. All that the physician needs out of the official books is the names of the substances standardized, and the strengths of approved preparations. He does not require either the National Formulary or the Pharmacopeia. But he does require some book that from the vast amount of matter embodied in the Pharmacopeia and the National Formulary furnishes him with the names of such drugs and the strengths of such preparations as he may need for intelligent prescribing. He also requires a book so constituted that it will permit of frequent revision, and thus include remedies recently introduced to the profession and not yet adopted by the Pharmacopeia.

Such a book is "Useful Drugs," published by the Council on Pharmacy and Chemistry of the American Medical Association. It is of pocket size, gives the names and strengths of approved official preparations, and includes some drugs and preparations of recent introduction that are not official. In addition, it gives brief summaries of the actions and uses of all the drugs of which it treats, with their properties, incompatibles and doses. It is essentially a selective compendium and should, for the present at least, be the practitioner's Pharmacopeia. Without in any way intending to speak disparagingly of the Pharmacopeia or the National Formulary, I believe that "Useful Drugs" is the best book for the physician. But it has no control over standards and must depend for these almost wholly on the Pharmacopeia. Hence a proper revision of the Pharmacopeia is of the greatest interest and importance to us.

The Pharmacopeial Revision Convention meets in Washington in May of this year. It is made up of delegates

from the medical and pharmaceutical colleges, the state and national medical and pharmaceutical societies, and certain other selected societies, and the Army, Navy and Public Health services. Its function is to determine the principles which shall govern the next revision of the Pharmacopeia, and to elect officers and a Committee of Revision. As we physicians are the ones to prescribe the drugs and preparations of the Pharmacopeia, it is beyond cavil our function to exert ourselves and make certain that the principles adopted shall suit us, and that the revision committee elected shall be in sympathy with our desires. To accomplish this the first thing to do is to see to it that every medical college and every medical society selects interested delegates to the convention, and pledges them to attend the convention. If this is done we need not fear for the result.

I would suggest that when we meet in the convention, we should stand together for two demands: 1. That it is the right of the prescribers of drugs as represented by the medical delegates to the convention to say what drugs and what preparations are to be considered by the Committee of Revision. This done, we can safely leave the methods of manufacture and the tests and other matters to the pharmaceutical, chemical and other delegates. 2. That every means be employed to abolish dilatory methods in the revision, so that we shall not again, as in the last revision, have the amazing lapse of more than six years between the meeting of the convention and the establishment of the revised book as the official Pharmacopeia.

For details of changes to be urged I would suggest:

1. That glandular drugs and their pure principles be introduced as far as possible, e. g., epinephrin, corpus luteum, ovarian extract, etc.

2. That the name of each alkaloidal salt be accompanied by a statement of its percentage of pure alkaloid. For example, quinin tannate contains only 30 to 35 per cent. of quinin, and morphin sulphate contains only three-fourths its weight of morphin.

3. That drugs and preparations which do not combine decided worth with use be dropped. A tentative list of such is: acetum scillae, acidum stearicum, althaea, aqua creosoti, arnica, calcium bromid, calcium hypophosphite, chondrus, cimicifuga, emulsum asafetidae, eriodictyon, guaiac, guarana, humulus, liquor iodi compositus, manna, matricaria, mel, mel depuratum, mel rosae, mezereum, mistura glycyrrhizae composita, oleatum hydrargyri, pepo, petroselinum, pyrethrum, sabal, sinapis alba, stillingia, syrupus hypophosphitum, taraxacum, trituratio elaterini (not elaterinum itself; elaterin can be prescribed without an official dilution quite as well as any of the potent alkaloids), trochischus sodii bicarbonatis, unguentum hydrargyri nitratis, xanthoxylum, zinci sulphocarbolas, zincum, and all oleoresins except that of aspidium. Substances of pharmaceutical value only, such as stearic acid, althaea and honey, should not cumber the body of the book. It is to be borne in mind that most of the substances dropped will still find a place for standardization in the National Formulary, and will therefore continue to be available in standardized form for those who wish them. But they should not receive the recognition of a highly scientific and exclusive book such as we desire our Pharmacopeia to be.

4. That all fluidextracts with dose below 5 minims be dropped, and if necessary replaced by a 10 per cent. tincture. It is agreed that many fluidextracts, because of their concentration, cannot be made to hold all the active principles of the drug from which they are made, and that they are subject to material changes of strength from precipitation or evaporation. The requirement of assayed strength does not change these facts. It has been shown repeatedly that the average fluidextract of digitalis is not ten times as strong as the tincture, as it should be, but perhaps only about three times as strong! With potent drugs this is a serious matter.

5. That newly introduced chemical substances of proved worth be included. It is a crying shame that our Pharmacopeia does not yet recognize solution of epinephrin (adrenalin) chlorid, argyrol, acetylsalicylic acid, arsphenamin, etc. Even though they are patented preparations they should be given some recognition, the Pharmacopeia stating that they are patented and giving the time of expiration of the patent.

6. That the genitive of all titles be appended. How many of us, for example, in prescribing milk of magnesia, know that in a prescription the official preparation should be written "Magmatis magnesiae" and not "Magmae magnesiae"?

7. That whisky and brandy be restored. With our new prohibition laws these medicinal liquids will be as precious as potent tinctures, and will need standards if they never did before.

I make these suggestions for the medical delegates, and urge that we take our next month's pharmacopeial convention seriously. For the sake of the best medical practice, all medical colleges, all state medical associations, and any other medical body which has the privilege of sending delegates to next year's pharmacopeial convention should appoint these without delay and see to it that they attend the convention with some understanding of their responsibilities.

W. A. BASTEDO, M.D., New York.
Fifth Vice President, U. S. Pharmacopeial Convention of 1920; Assistant Professor of Clinical Medicine, Columbia University College of Physicians and Surgeons.

STOLEN SURGICAL INSTRUMENTS

To the Editor:—Two bags of instruments, dressings, etc., and a small mahogany clock were stolen from my office three weeks ago. I have recovered one of the bags with many instruments, but they are not mine. It seems that somebody is gathering these for resale. I would suggest that if second-hand instruments are offered to any physician for sale, he should appear to be too busy to pass judgment at the time, regardless of the story told, but ask the person to return in an hour or two, and, retaining the instruments, in the meantime call an officer: all this, of course, to be modified according to circumstances. Perhaps a central reporting place for lost and found instruments would discourage theft. The owner of the instruments that I have may obtain them by calling at my office.

WILLARD MANFORT, M.D., Detroit.

LEPROSY IN THE AGED

To the Editor:—I have before me the issue of THE JOURNAL for Nov. 15, 1919. In the second column on page 1547 appears: "DR. H. R. CARTER, Baltimore: There is good reason to believe that leprosy is *rarely* or *never* communicated to elderly persons. In taking care of lepers I would suggest that elderly nurses be employed, as the risk of such people contracting the disease is *absolutely nil.*"

The italics are mine. Probably most workers among lepers would agree with a general statement to the effect that elderly persons are less likely to become infected with the disease than are young persons. Perhaps the speaker only wished to make his idea stick in the minds of his hearers by making it overstrong; but I want to protest against the use of the words that I have italicized, as being likely to mislead our confrères in America.

Having seen the usual number of cases of leprosy that come to medical missionaries here, during thirty years' residence in Foochow, where leprosy is a very common disease, I cannot refrain from saying that such experience quite contradicts the very positive statements made above. Just recently an old Bible woman that has been working among lepers here for years, a woman who was very careful about her contacts with them, who was unusually cleanly in every way, has developed the disease. Her contact with the lepers could not have been as intimate as that of persons caring for such cases, for that was not her duty at all, and the years that she had been engaged in the work might have seemed to justify a statement almost as strong as the one to which I object; but there is no doubt that the woman is now infected. Other cases have come to my attention in the past, but this is the latest one and answers, as well as any

number, to emphasize the point that I make. Elderly persons *may* and *do* contract leprosy, though they are probably less likely to do so than younger persons.

H. N. KINNEAR, M.D., Foochow, China.

INTERNATIONAL COMMITTEE OF THE RED CROSS OF GENEVA, AND THE LEAGUE OF RED CROSS SOCIETIES

To the Editor:—My attention has been called to an article in THE JOURNAL, Jan. 31, 1920, p. 334, concerning the coming meeting of the General Council of the League of Red Cross Societies. A confusion exists in the mind of the writer of this article between the International Committee of the Red Cross of Geneva and the League of Red Cross Societies, which also has its headquarters in Geneva. These two institutions are entirely distinct, and there is no official connection between them. The International Committee of the Red Cross of Geneva is composed of seventeen citizens of Switzerland, and has been in existence since the founding of the Red Cross by Henri Dunant in 1863. During the war the International Committee of the Red Cross of Geneva served as intermediary for the exchange of prisoners. The League of Red Cross Societies is constituted by thirty national Red Cross Societies, as follows: Argentina, Australia, Belgium, Brazil, Canada, China, Cuba, Czechoslovakia, Denmark, France, Great Britain, Greece, Holland, India, Italy, Japan, New Zealand, Norway, Peru, Poland, Portugal, Roumania, Serbia, South Africa, Spain, Sweden, Switzerland, the United States, Uruguay and Venezuela.

WILLIAM R. HEREFORD, Geneva, Switzerland.
Director, Department of Publicity and Publication, League of Red Cross Societies.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BOOKS AND PERIODICALS ON OTORHINOLARYNGOLOGY

To the Editor:—1. I intend specializing in the ear, nose and throat. What textbooks do you advise me to get on these subjects?

2. Is there an atlas of anatomy, pathology or surgery (of one, two or all three) published of the ear, nose and throat?

3. Who publishes "The Nose and Throat in Medical History," by Jonathan Wright?

4. Is there a book published containing the biographies of the great men in medicine or "Who's Who" in medicine?

5. What journals on otology, rhinology and laryngology would you advise me to subscribe to?

6. Who publishes the *British Journal of Otology, Rhinology and Laryngology?*

M. L. SOWERS, M.D., Allston, Mass.

ANSWER.—

1. Packard: Nose, Throat and Ear, Philadelphia, J. B. Lippincott Company, $4.
Ballenger: Ear, Nose and Throat, Philadelphia, Lea & Febiger, $5.50.
Kyle: Nose and Throat, Philadelphia, W. B. Saunders, $5.
2. Krieg: Atlas of Diseases of Nose, New York, Paul B. Hoeber, $12.
3. Wright: Nose and Throat in Medical History, St. Louis, L. S. Matthews, $2.
Wright: History of Laryngology, Philadelphia, Lea & Febiger, $4.
4. Garrison: History of Medicine, Philadelphia, W. B. Saunders Company, $7.50.

Medical men are also included in the ordinary editions of "Who's Who."

5. The following journals are published in America:

Annals of Otology, Rhinology and Laryngology, Jones H. Parker, Mermod-Jaccard Bldg., St. Louis, $6.
Laryngoscope, 3858 Westminster Place, St. Louis, $6.
6. The *British Journal of Otology, Rhinology and Laryngology,* published by Adlard & Son and West Newman, Ltd., Bartholomew Close, London, E. C. N., £1.

Good Health.—Euphonious definitions of good health are numerous. Clear conceptions of good health are rare. It is easy to define; difficult to conceive.—W. S. Rankin, *Tr. Assn. Life Ins. Presidents,* 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.
IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.
IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.
LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.
MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.
MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.
NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.
OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.
RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

New York May and June Examination

Mr. Herbert J. Hamilton, assistant, professional examinations, New York State Board of Medical Examiners, reports the written examinations held at New York City, Buffalo, Syracuse and Albany, May 21-24 and June 25-28, 1919. The examination covered 8 subjects and included 10 questions. An average of 75 per cent. was required to pass. Of the 384 candidates examined, 306, including 2 osteopaths, passed, and 78, including 1 osteopath, failed. The following colleges were represented:

College	Year Grad.	Number Licensed
PASSED		
Leland Stanford Junior University	(1917)	1
George Washington University	(1916)	1
Rush Medical College	(1915)	1
University of Illinois	(1919)	1
Tulane University	(1914)	1
Johns Hopkins University	(1914), (1915), (1916), (1919)	4
College of Physicians and Surgeons, Baltimore	(1913)	1
Harvard University	(1910, 2), (1913), (1918), (1919, 2)	6
Tufts College Medical School	(1913), (1918, 3)	4
University of Michigan Medical School	(1918), (1919, 2)	3
Albany Medical College	(1917), (1919, 11)	12
Columbia Univ. (1914), (1915), (1917,5), (1918,7), (1919,36)		50
Cornell University	(1917), (1918, 4), (1919, 12)	17
Fordham University (1914), (1916), (1917), (1918, 2), (1919, 7)		12
Long Island College Hospital (1917, 2) (1918, 4). (1919, 38)		44
New York Homeo. Med. College and Flower Hospital (1915), (1916, 3), (1917, 5), (1918, 6), (1919, 13)		28
Syracuse University	(1919)	19
University and Bellevue Hospital Medical College.. (1917), (1918, 4), (1919, 29)		34
University of Buffalo	(1917, 2), (1918, 2), (1919. 37)	41
University of Oklahoma	(1918)	1
Jefferson Medical College	(1915), (1917), (1919)	3
University of Pennsylvania	(1908), (1913), (1918, 3)	5
Woman's Med. Coll. of Penna.	(1913), (1915), (1919)	3
University of Tennessee	(1917)	1
Vanderbilt University	(1912)	1
University of Vermont	(1915), (1917), (1918, 2)	4
University of Virginia	(1916)	1
Queen's University	(1910), (1918), (1919)	3
University of Toronto	(1915), (1918)	2
FAILED		
Georgetown University	(1917)	1
Howard University	(1916), (1918, 2)	3
Chicago College of Med. and Surg.	(1914)	1
College of Phys. and Surgs. Chicago	(1902)	1
Rush Medical College	(1895)	1
Kansas Medical College	(1903)	1
University of Louisville	(1908)	1
College of Physicians and Surgeons, Baltimore	(1912)	1
University of Maryland	(1917)	3
Harvard University	(1908), (1918, 2)	3
Tufts College Medical School	(1917, 3), (1919)	4
University of Michigan Homeopathic Medical School	(1918)	1
Albany Medical College	(1909), (1914)	2
Columbia University	(1919)	3
Cornell University	(1917), (1919)	2
Fordham University	(1912), (1913), (1916, 2), (1918)	5
Long Island College Hospital	(1917), (1919, 4)	5
New York Homeopathic Medical College and Flower Hospital	(1915, 3), (1916, 5), (1917), (1918, 7)	16
New York Medical College and Hospital for Women	(1917)	1
University and Bellevue Hospital Med. Coll.	(1915), (1919)	2
Eclectic Medical College	(1916)	1
Jefferson Medical College	(1899), (1914), (1916)	3
Medico-Chirurgical College of Philadelphia	(1916)	1

University of Pennsylvania	(1918)	1
Vanderbilt University	(1910), (1917)	2
University of Vermont	(1901), (1916), (1918)	3
Medical College of Virginia	(1914), (1915, 2)	3
Queen's University	(1904), (1916), (1918)	3
McGill University	(1917)	1
University of Bologna	(1912)	1
University of Berne	(1910)	1

Mr. Hamilton also reports that between May 1 and Nov. 17, 1919, 62 candidates were licensed by endorsement of their credentials. Of these, 5 were granted reregistration licenses, 28 were granted licenses by reciprocity with other states, 8 were licensed by endorsement of their diplomas, and 21 by endorsement of their licenses on the basis of eminence and authority in the profession. Of those licensed by reciprocity and endorsement of credentials, the following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1912)	Wisconsin
Columbia University		(1915)	Virginia
New York Homeo. Med. Coll. and Flower Hosp.		(1917)	Delaware
Univ. and Bellevue Hosp. Med. Coll.		(1913), (1915)	New Jersey
College of Physicians and Surgeons, Baltimore		(1907)	Ohio
Johns Hopkins University		(1916)	New Jersey
Harvard University		(1915)	Wisconsin
Eclectic Medical Institute		(1905)	Ohio
Western Reserve Univ. (1910), (1912), (1913, 2)		(1916)	Ohio
Jefferson Medical College		(1915)	New Jersey
Woman's Med. Coll. of Pennsylvania		(1908)	New Jersey
University of Nashville		(1909)	Virginia
University of Vermont		(1914)	Virginia
Medical College of Virginia		(1913), (1914)	Virginia
Univ. Coll. of Med. Richmond		(1902), (1909), (1911)	Virginia
University of Virginia		(1914)	Virginia
Milwaukee Medical College		(1912)	Wisconsin
National University, Athens		(1898) New Jersey, (1909)	Ohio
University of Naples		(1908)	New Jersey

College	ENDORSEMENT OF DIPLOMAS	Year Grad.
Harvard University		(1892)
Bellevue Hospital Medical College		(1875), (1886)
University of the City of New York		(1886)
Woman's Medical College of the New York Infirmary for Women and Children		(1891)
Jefferson Medical College		(1876), (1891)
University of Turin		(1892)

College	ENDORSEMENT OF LICENSES	Year Grad.	Endorsement with
Yale University		(1912)	Connecticut
Georgetown University		(1905), (1909)	Dist. Colum.
Northwestern University		(1898)	Louisiana
Drake University		(1909)	Iowa
University of Louisville		(1910), (1913)	Kentucky
Tulane University		(1904)	Alabama
University of Maryland		(1910)	Penna.
University of Michigan Homeo. Med. School		(1914)	Michigan
University of Michigan Medical School		(1912)	Michigan
University of Minnesota		(1914)	Minnesota
John A. Creighton Medical College		(1895)	Missouri
Albany Medical College		(1893)	Vermont
Hahnemann Med. Coll. and Hosp. of Phila.		(1899)	Connecticut
Jefferson Medical College		(1894)	Mass.
Vanderbilt University		(1902)	Oklahoma
University of Vermont		(1894), (1905)	Vermont
McGill University		(1899)	Quebec
University of Central Spain		(1897)*	Porto Rico

*License not verified.

Maine November Examination

Dr. Frank W. Searle, secretary of the Maine State Board of Registration in Medicine, reports the written examination held at Portland, Nov. 12-13, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 9 passed and 2 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Medical School of Maine		(1883)	82
Johns Hopkins University		(1900)	82
Tufts College Medical School		(1919)	80
Columbia University		(1913)	86
University and Bellevue Hospital Medical College		(1910)	84
Jefferson Medical College		(1914)	89
University of Vermont		(1917)	79
Laval University		(1919)	78
McGill University		(1917)	79
	FAILED		
Tufts College Medical School		(1919)*	78
Montreal School of Medicine and Surgery		(1919)*	76

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Starling Medical College		(1897)	Ohio
Boston University		(1915)	New Hamp.
University of Maryland		(1917)	S. Carolina

* Fell below sixty in one branch.

Book Notices

LES LÉSIONS DES NERFS: TRAITEMENT ET RESTAURATION. Par Mme. Athanassio-Benisty, Ancien Interne des Hôpitaux de Paris. Paper. Price, 7 francs net. Pp. 156, with illustrations. Paris: Masson et Cie, 1919.

In this small volume, Mme. Athanassio-Benisty presents much that was included in the second volume of her work on peripheral nerves as it appeared in the Horizon Collection and in the English translation in the Medical War Manuals. The subject-matter has been brought up to date, particularly with reference to the surgical treatment, the prognosis, medicomilitary decisions, and the important work of Dustin on intraneural localization. Each of the chapters constitutes a comprehensive and adequate review of the author's wide experience and the recent literature. The description of the signs of restoration of function in peripheral nerve lesions is exhaustively treated, and at this time will be found of great value to American neurologists and surgeons who are following the results obtained in the treatment of injuries of peripheral nerves in the late war. The observations are in accord with the experience of the reviewer, but do not seem to be entirely in accord with the theories of Head, Rivers and others relative to the return of sensation, although an attempt is made to fit the clinical findings to their theory. In this volume, as in the preceding publications, there is an exhaustive description of orthopedic apparatus, which is preeminently applicable at this time in our treatment of lesions of the peripheral nerves.

THE URETHROSCOPE IN THE DIAGNOSIS AND TREATMENT OF URETHRITIS. By Major N. P. L. Lumb, O.B.E., R.A.M.C. Cloth. Price, $2.75. Pp. 51, with 40 illustrations. New York: William Wood and Company, 1919.

The author asserts that he derived the incentive for writing this booklet from the fact that in no work that has come to his notice has an attempt been made to show the effect of treatment on the lesions of urethritis which can be observed with the urethroscope. Authors of special textbooks on this subject will regret that their work has been thus unnoticed. The illustrations, though somewhat schematic and considerably magnifying the natural size of the field of view, come up to a fair standard. Inflammatory granulomas, so often observed, and known as maintaining obstinate gonorrheal inflammation, have not found a place in this treatise. Many urologists will be surprised at the author's assertion that it is usually possible to clear up a prostatic abscess by massage and general treatment. Inaccuracies in the text, as "the vascular striation is seen to best advantage in this region and consequently any abrasion of the surface . . . leads to considerable bleeding" (page 7), or, as in the discussion of gonorrheal epididymitis, "when the testicle has settled down" (page 47), should not occur in a treatise that pretends to be the last word in systematic treatment of gonorrhea.

EXPERIMENTAL PHARMACOLOGY. By Hugh McGuigan, Ph.D., M.D., Professor of Pharmacology in the University of Illinois, College of Medicine. Cloth. Price, $2.75. Pp. 251 with 63 illustrations. Philadelphia: Lea & Febiger, 1919.

A period of relative stagnation in the production of works on experimental pharmacology has been replaced by one of relative productivity. Within the last few years a number of commendable texts have either been thoroughly revised or written anew. Most of them have been overwhelmingly personal, so that it is gratifying to find one in which "no claim to originality is made." Rather an effort has been made to include standard exercises. To a certain extent this book is a synopsis of drug action on various anatomic systems. It is sufficiently brief so that the student is not robbed of the opportunity to display his originality. It is a fairly satisfactory guide in his work. One regrets that the proof-reading was not done with greater care. For example, the careful student may be mystified by the "apparatus for anesthesia by *intracranial* insufflation" (p. 33).

KOMPENDIUM DER TOPISCHEN GEHIRN UND RÜCKENMARKSDIAGNOSTIK. Kurzgefasste Anleitung zur klinischen Lokalisation der Erkrankungen und Verletzungen der Nervenzentren. Robert Bing, a.o. Professor an der Universität Basel. Vierte, neu durchgesehene Auflage. Mit 97 zum Teil mehrfarbigen Abbildungen.

The author states that this edition is practically a replica of the third, such a short time having elapsed between the two. The book remains, then, what it was: first, an excellent outline of the essentials of the structural anatomy and applied physiology of the central nervous system; secondly, a rather full summary of localizing diagnosis of lesions of cord, brain stem, cerebrum and cerebellum. Fully to cover the subject and at the same time make every part of the text clear to the tyro is impossible. The author's attempt is quite as successful as one could expect. The internist and surgeon generally will find what they are looking for, and the neurologist may here quickly pick up some strand dropped from memory's thread. The illustrations are well chosen and easily understood, and the index is adequate.

Medicolegal

Validity of Law Relative to Disfigurement

(New York Cent. R. Co. v. Bianc (U. S.), 40 Sup. Ct. R. 44)

The Supreme Court of the United States holds constitutional the provision of the workmen's compensation act of the state of New York that, in case of an injury resulting in serious facial or head disfigurement, the state industrial commission may in its discretion make such award or compensation as it may deem proper and equitable in view of the nature of the disfigurement, but not to exceed $3,500. The court says that the sole contention here was that this provision deprived the employer of property without due process of law, in contravention of the fourteenth amendment of the constitution of the United States. The argument was that an award for disfigurement, made wholly independent of the claimant's inability to work, was not based on impairment of earning power; that only such impairment could justify imposing on an employer without fault compulsory payment by way of compensation to an injured workman; and hence that the disfigurement clause was not a reasonable exercise of the police power, but was arbitrary and oppressive. But even were impairment of earning power the sole justification for imposing compulsory payment of workmen's compensation on the employer in such cases, it would be sufficient answer to the present contention to say that a serious disfigurement of the face or head reasonably may be regarded as having a direct relation to the injured person's earning power, irrespective of its effect on his mere capacity for work. Under ordinary conditions of life, a serious and unnatural disfigurement of the face or head very probably may have a harmful effect on the ability of the injured person to obtain or retain employment. Laying aside exceptional cases, such a disfigurement may render one repulsive or offensive to the sight, displeasing, or at least less pleasing, to employer, to fellow employees, and to patrons or customers. But this court cannot concede that impairment of earning power is the sole ground on which compulsory compensation to injured workmen legitimately may be based, although unquestionably it is a rational basis. In this court's opinion, the "due process of law" clause of the fourteenth amendment does not require the states to base compulsory compensation solely on loss of earning power. The court sees no constitutional reason why a state may not, in ascertaining the amount of such compensation in particular cases, take into consideration any substantial physical impairment attributable to the injury, whether it immediately affects earning capacity or not. Whether an award for such disfigurement should be made in combination with or independent of the compensation allowed for the mere inability to work is a matter of detail for the state to determine. The same is true of the question whether the compensation should be paid in a single sum, or in instalments.

Indemnification Against Liability for Malpractice

(Schambs v. Fidelity & Casualty Co. of New York (U. S.), 259 Fed. R. 55)

The United States Circuit Court of Appeals, Sixth Circuit, says that a surgeon carried with the defendant company a policy of so-called liability insurance, limited to $5,000. An action for malpractice was brought against him by one Rainsford. The company assumed the defense of the suit. Rainsford obtained judgment for $10,000. The company, with the consent of the surgeon, decided not to prosecute any proceeding for review. Thereupon the surgeon filed a voluntary petition and was adjudged a bankrupt. He scheduled this judgment as his only debt, and showed assets of some $400. The trustee in bankruptcy, after providing for expenses, paid a 2 per cent. dividend on this claim—the only one proved—and thereupon brought this action to recover from the company the $5,000 named in the policy. The company contended that it was liable only for what the surgeon or his trustee had paid to Rainsford, namely, $200, and the trial court took that view.

That portion of the policy which directly imposed liability read as follows: "[The company] does hereby agree: (1) To indemnify . . . assured against loss from liability imposed by law on assured for damages on account of bodily injuries or death suffered by any person or persons in consequence of any malpractice, error or mistake of the assured. . . . (2) To defend, in the name and on behalf of the assured, any suit brought against the assured, etc." Later clauses specifically provided (7) that the company would continue the defense of any such suit "until a final decision is rendered in the assured's favor, or until the case has been appealed to the highest court to which an appeal can be taken, or until the suit has been settled with the written consent of the assured," and (9) that the assured should not "voluntarily assume any liability nor incur any expense, . . . nor, except at his own cost, settle any claim, nor . . . interfere in any negotiations or legal proceedings conducted by the company on account of any claim."

On the merits, the controlling question was this: Did the company indemnify against any part of the Rainsford judgment which the surgeon or his estate had not paid? The question, in somewhat analogous cases, has been considered to be whether the indemnity was against liability or was only against ultimate loss, and there is supposed to be a sharp conflict of authority between the cases which classify such policies in one or the other category, although, when the court comes to consider the peculiar language of this policy, it does not find any embarrassing conflict. In policies of this nature, the distinction was early recognized between insurance against liability and indemnity against damages. In view of this distinction, it became common to insert in such policies the provision known as the "no action" clause, which provided that, for example: "No action shall lie against the company as respects any loss under this policy, unless it shall be brought by the assured himself to reimburse him for loss actually sustained and paid by him in satisfaction of a judgment after a trial of the issue."

Under such "no action" policy, it was held, in Massachusetts, that the plain and express language of the policy must be given effect, and that the duty to indemnify did not arise until the judgment was paid, and this conclusion has been quite generally adopted in cases involving "no action" policies. But in the present instance the company omitted the "no action" clause from the policy. The court does not find any substantial inconsistency between clause 1 and the later clauses mentioned; but it does think it clear that, as the word "loss" is used in clause 1 it is ambiguous, and it holds that when the parties, in clause 1, referred to a "loss from liability," they intended that kind of a loss which, in ordinary nomenclature and thought, comes into existence when the liability of the assured becomes irretrievably fixed, so that the plaintiff, who was the trustee in bankruptcy of the surgeon's estate, was entitled to prosecute this action at law; in accordance with which view the judgment of the court below is reversed, and the case remanded for a new trial.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Association of Physicians, Atlantic City, May 4-5.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
American Urological Association, New York, March 23-25.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Georgia Medical Association, Macon, May 6-8.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Medical Veterans of the World War, New Orleans, April 26.
Mississippi State Medical Association, Jackson, May 11-12.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New Hampshire Medical Society, Concord, May 12-13.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

(Continued from p. 761)

Report of Committee on Medical Education and Pedagogics of the Association of American Medical Colleges

DR. W. S. CARTER, Chairman, Galveston, Texas: It did not seem practicable to prepare reports on all the subjects of the medical curriculum at this time, and hence these were limited to the fundamental medical sciences which are taught by laboratory methods during the first and second years, with the exception of public health and preventive medicine, which is usually taught in the years devoted to clinical subjects. The preparation of these reports is in no way a duplication of the work done by the committee of one hundred appointed by the Council on Medical Education in 1909. The purpose of the reports to be presented is not to standardize, but to consider the methods of teaching the subjects that occupy the preclinical years.

Teaching of Gross Human Anatomy

DRS. C. M. JACKSON, WILLIAM KEILLER and C. R. BARDEEN: The chief factor in teaching gross human anatomy is the professor. His most essential natural endowments are executive capacity and ability for constructive scientific research. His special training, in addition to a thorough grounding in gross and microscopic anatomy, embryology and physiology, should embrace the broader aspects of biology and anthropology, on the one hand, and pathology and clinical physiology, on the other hand. To keep up an adequate supply of teachers of this type it will be necessary to have salaries for those who make good on a par with those offered full-time clinical teachers. The education of the medical student in gross human anatomy has to do with work in (*a*) technic; (*b*) terminology and topography; (*c*) comprehension, and (*d*) initiative:

Education in technic should include (1) preparation of material for study, (2) methods of study, and (3) expression of observations and ideas. The chief training in technic of preparation for students of gross human anatomy is training in dissection. As a rule, this is well taught in our schools at present. The training in methods of study is fairly well done so far as the student is taught to make use of textbook and guide while dissecting. The student, should be encouraged to go beyond this and to make use of reference books, special preparations, roentgenograms and similar facilities. It is more important for a student to learn to know how to seek light on an obscure question of structure than it is to commit to a memory necessarily imperfect a vast amount of detail well recorded in every textbook. Training in technic of expression is more neglected than it should be in our anatomic departments if we consider its importance from the standpoint of practice of scientific clinical medicine.

By training in terminology and topography we mean acquiring the use of anatomic terms in association with a visualization of the structures to which these terms refer. It is now generally recognized that in order to aid this association of ideas, anatomic terms should be learned in the dissecting room. The old fashioned didactic lecture has practically disappeared in teaching gross anatomy.

One of the most difficult tasks in teaching gross human anatomy is to lead the student to comprehend the subject. For the average medical student the comprehension of structure from the standpoint of function seems most important. For this purpose the living model, and the fluoroscope and roentgenogram are of great help.

Gross human anatomy offers an unusual opportunity for training in initiative. If granted considerable freedom, the student may waste some good anatomic material; but he has not the opportunity to injure physically either himself or other people or valuable property he would have if granted the same freedom in most laboratories or in the clinic. Since initiative is so important a quality for a physician, it seems clear that advantage should be taken of the opportunity for encouraging initiative in gross human anatomy.

Teaching of Histology and Embryology

DR. F. C. WAITE, Cleveland: By means of questionnaires, the subcommittee collected the opinions of teachers in forty-four of the fifty-nine medical schools then in membership in the Association of American Medical Colleges. The following preliminary conclusions are reached after a digestion of these opinions:

TERMINOLOGY

The word embryology is a sufficient title for the courses in embryology given in the medical schools, without any designation as to whether it is vertebrate, mammalian, human, etc. The course on the gross and microscopic anatomy of the nervous system and sense organs is best designated by the term neuro-anatomy, since the term neurology is so largely used to designate courses in diseases of the nervous system. The part of the course on the finer anatomy of the organs exclusive of the nervous system and sense organs is best designated by the term organology. The part of the course on the fundamental tissues is best designated as histology, and this term should be restricted to this field and not used as a general term to include organology also. If the term is not so restricted, then the term general histology should be applied to that part of the course on the fundamental tissues. In the course in histology and organology, histologic technic should not be a required part; but the laboratory should furnish loan collections to the student to be returned at the end of the course.

HISTOLOGY AND ORGANOLOGY

The course in histology and organology, exclusive of any histologic technic, requires at least 180 scheduled hours, of which from 35 to 40 per cent. should be devoted to histology and from 60 to 65 per cent. to organology. Of the scheduled time, approximately 25 per cent. should be given to didactic work and 75 per cent. to laboratory work. For efficient teaching, the number of instructors must be such that in the laboratory there are not more than from twenty-two to twenty-four students to each instructor; and if the best results are to be obtained, there should not be more than from

sixteen to eighteen students to each instructor in the laboratory. The course in histology and organology should be given in moderate concentration extending over from sixteen to eighteen weeks.

EMBRYOLOGY

The course in embryology should be a separate course given either parallel with or following organology. The course should occupy approximately 100 hours of scheduled time. From 30 to 40 per cent. of this time should be devoted to the development of forms below mammals, and the balance to mammalian embryology. Embryology lends itself to greater concentration of schedule than do histology and embryology, and the course should be covered in from eight to twelve weeks.

The courses in histology, organology and embryology should be given in the first year, beginning either at the beginning of the year or sometime in the first half year. The shortness of time available and the varied wishes of the clinical instructors make it impossible to make the first year courses in this field courses in applied organology. They must primarily prepare for physiology and pathology (for which this work should be prerequisite), and therefore be on a broad basis rather than planned to prepare separately for each of the several clinical subjects and specialties.

RESEARCH

There apparently is little time that is available for elective courses in this field. Research in this field cannot be expected from the ordinary undergraduate medical student. Only students who are exceptional in preparation and abjlity and who can give additional time should be expected to do research.

Teaching of Neuro-Anatomy

Dr. Irving Hardesty, New Orleans: The name neuro-anatomy is accepted for the course by 56 per cent. of the colleges answering the questionnaire, while 24 per cent. specify the term neurology. Others suggest excellent but more cumbersome terms. Doubtless, nearly all prefer neurology in that it is shorter and carries the more suitable meaning—knowledge or discussion of the nerves or nervous system—while neuro-anatomy carries the untrue inference that the subject is wholly anatomy. The minimum time necessary should be given as from 120 to 132 hours at least. Neuro-anatomy requires more concentrated and consecutive effort on the part of the student and instructor than any other division of anatomy. It deals with one continuous functional apparatus, knowledge of which must be added to day by day, with as little break in effort and as little diversion by other courses as possible. We urge that concentration of hours is very profitable for the student learning it.

From the very nature of what the course should be, it is obvious that the courses in histology and embryology should be required as prerequisite to entering the course in neuro-anatomy. The dissection of the entire body should be completed before neuro-anatomy is begun, certainly the head, neck and thorax. A supplementary review course in neuro-anatomy is advisable in the later years of the curriculum, introductory to the work in nervous and mental diseases. Cooperation in teaching among the staffs of neuro-anatomy, physiology, pathology and the staff of nervous and mental diseases is necessary. Anatomic names used should be as short as possible and each carry the proper functional significance in its meaning. The tracing of nerve paths is by far the most important object of the course.

Teaching of Physiology

Dr. E. P. Lyon, Minneapolis: A teacher of physiology should have (1) thorough training in biology, chemistry, mathematics and physics; (2) several years' study in a physiologic laboratory presided over by a productive and stimulating professor, and (3) appreciation of the aims and problems of practical medicine. For the latter purpose, clinical training is desirable, but not indispensable. No amount of clinical training can take the place of the first and second elements of a physiologist's education. It does not matter what degree the physiologist attaches to his name, provided he has brains and proper training. The head of a department of physiology, in addition to the training outlined above, should be an inspiring leader to his staff and students. The quality of scientific imagination is essential in this connection. Select a man with this education and these qualities, gives him freedom and security of tenure. Do not "teach" him to death. Give him an adequate salary. Supply a well trained staff. Don't forget that his leading subordinates should be strong men and should have good salaries, not a third or half, but three quarters or 90 per cent. that of the chief. Supply such salaries, not only because they are deserved, but because from this group of assistants come the future leaders. We must have a "school" or physiology and some future for its students, or they will leave pure science, as they are now doing.

As to methods of teaching, freedom must be permitted. The lecture is valuable for those who possess good power of exposition. The laboratory course is important and needs most careful and skilful teaching. It should not be left to subordinates. The laboratory work should be quantitative so far as possible. Problems for mathematical solution are valuable.

The course should include a judicious selection of frog, turtle, mammalian and human experiments. Demonstrations should be used to a considerable extent. Students should assist and be required to work up quantitative data on demonstrations. The laboratory and demonstration work must be used to form the background for a large amount of necessary didactic work. The field is too large for a student actually to see every part of it; but unless a basis of observation is provided, visualization from description cannot be even approximately correct. This thought should always determine the relation of didactic to laboratory work. Any device, such as theses, required reading and special problems that will send students to the library should be used. The entire course in physiology should be developed from the standpoint of "principles" rather than that of "technic" or that of "useful information." Principles are just the underlying facts. They are not theoretical abstractions or unproved hypotheses. Physiology teachers can and should introduce useful special facts and useful methods into their teaching; but unless they give their students a thorough knowledge of the facts of universal application, i. e., principles, they will not furnish a fitting background for modern clinical training.

DISCUSSION

Dr. Burton D. Meyers, Bloomington, Ind.: The time has come to establish a course in neuro-anatomy, but it must depend on the equipment which the department has for teaching the subject. You cannot teach neuro-anatomy without having a complete series of sections from the cervical nerve up beyond the anterior commissure to be used in the projection apparatus. Then, one can give the course in neuro-anatomy in from eighty-five to 105 hours.

Dr. H. Gideon Wells, Chicago: The committee on teaching anatomy made a mistake in selecting its sources of information. It should have sent the questionnaires to pathologists in order to get a heartfelt constructive criticism, because the pathologist is the man who has to handle the work of the anatomist. He acts as a buffer between the anatomist and the clinician. A large proportion of pathologists feel that an undue proportion of the time assigned to them in the curriculum, if not most of it, is spent in remedying the deficiencies in instruction in anatomy.

Dr. J. P. Jobling, New York: Students come to us with an excellent knowledge of the relation which one tissue bears to another, with the vascular and nerve supply; but if you take a fresh liver at necropsy, make a section of it throughout, and separate the lobule, students want to know what it looks like. They know what it is histologically; they do not visualize what fresh tissue looks like. My suggestion is that in the course on anatomy we should show students a fresh liver, make sections, show the appearance of the normal organ, and compare it with the abnormal. It is not only important from the standpoint of the pathologist, but also from that of the surgeon. When he operates he wants to

know what the tissues are, yet the anatomist does not give him any information from his pickled organ of what such a tissue should look like.

DR. JAMES EWING, New York: I agree with Dr. Wells that the committee made a fundamental error in the selection of its sources for information. It should have referred the questionnaire to the students and got their reaction. I am a teacher of laboratory subjects and am aware of the weaknesses of technic that students fall into. We become enamored of our methods of putting knowledge into the heads of students, and sometimes we forget what the object of our work is.

DR. W. F. R. PHILLIPS, Charleston, S. C.: As a teacher of anatomy, the only method I know of is that indicated by Vesalius when he used his own hands in teaching anatomy. I know of no other way to teach anatomy than to put the student before the subject and say, "There it is: go to it."

DR. IRVING S. CUTTER, Omaha: I have asked some practitioners and students where they learned the most anatomy and learned it best, and I was astonished at the answer, namely, at the postmortem table.

Teaching of Biologic Chemistry

DR. OTTO FOLIN, Boston: Closely associated with the problem of the necessary entrance requirements in chemistry is the question as to the amount of time that should be allowed for the teaching of physiologic chemistry in the medical school. Physiology and physiologic chemistry should have about the same time, and one fourth of a college year should be given to each of these two subjects. The time allotted to a laboratory subject like biochemistry is meaningless unless individual space and equipment for uninterrupted individual work are provided. It is also necessary that there should be in the laboratory at least 10 per cent. of unoccupied desk space available for miscellaneous uses for extra reagents, polariscopes, colorimeters, scales, etc.

The course in physiologic chemistry should consist of from seventy-five to eighty lectures and conferences (except so far as some of the lecture periods are used for one-hour written examinations), and an equal number of laboratory periods, two and one-half hours each (except so far as some of these are replaced by practical examinations). The first two weeks in the laboratory are needed for the preparation of standard solutions involving the use of the balance and for learning volumetric analysis. The lectures during this time must be partly instructions concerning the laboratory technic, but should deal mainly with the chemistry of solutions, the theory and practical use of indicators, and such topics as osmosis, reversible reactions, and the law of mass action. The work in volumetric analysis leads directly to the subject of quantitative nitrogen determinations, and the students can at once apply and fix their newly acquired experience by working on pure nitrogenous compounds. The lectures and reading at this time can advantageously cover the field of catalysis leading up to a general consideration of the field of enzymes. This work covers about three weeks, or from fifty-five to sixty hours, and trains the student as no other kind of work can train him in precision and attention to details.

The elementary first course in physiologic chemistry, coming as it generally does during the second half of the first year or first half of the second year, is not a course in pathologic chemistry, yet it includes the principles and methods on which the later applications to clinical materials are based. The student should not examine stomach contents, yet he studies pepsin and peptones, he learns to differentiate between hydrochloric acid and lactic acid, and he acquires some familiarity with the pigments of bile. He need never see a urine representing diabetes or nephritis, yet if given such a urine at the end of his course in physiologic chemistry he should be able to make a better chemical examination than he would four years later, when he is engaged as an intern in a hospital.

The examinations in biochemistry should be partly practical, partly written. These examinations should be numerous enough to permit a partial classification of the students by the time the course is half over. The practical examinations can advantageously consist, in part, of problems which the student solves when he gets ready, at a time chosen by himself; but, in part, they must consist of general examination sessions. Four such general examinations (besides the final) are a large enough number. These may be thus distributed: The first, volumetric analysis (including nitrogen determinations), the differentiation between strong and weak acids, and the use of different indicators. Second, the reactions of fats and carbohydrates, including sugar titrations. Third, identification of protein materials and milk constituents, including quantitative milk analysis. Fourth, urine analysis and other topics. It is not possible to take more than one-half the class at a time for these practical examinations. They will therefore occupy either eight laboratory periods, or four lecture plus laboratory periods.

There is urgent need for some constructive recommendations as to how the great and growing demand for well trained and productive biochemists by medical schools and hospitals may be met.

DISCUSSION

DR. A. P. MATTHEWS, Cincinnati: The need of medical institutions in this country is research. The future of medical education lies in research. All the problems of instruction will solve themselves as soon as we realize that the development of the research spirit is at the bottom of all good education.

DR. FRANK BILLINGS, Chicago: The practitioner or clinician who does his work most efficiently is found to have been well grounded in the fundamentals in medicine. We have in this country an enormous number of physicians practicing medicine. The greater number of them graduated before we had made much, if any, advance in medical education. They do not think in terms of anatomy, physiology, pathology, physiologic chemistry or normal physiology. They think only of a patient and of an opportunity to prescribe some drug. I do not think we have time enough in two years in which to teach the fundamentals of medicine properly, and we are embarrassed when we speak of a curriculum of both the fundamental and clinical branches to find enough time to teach both, so that the product is the best that can be turned out.

The Larger Function of State University Medical Schools

DR. WALTER A. JESSUP, Iowa City: Our experience in Iowa leads to these conclusions: First, in view of the great rapidity with which the demands on our hospital and university staffs have grown, it is important that any state, in attempting to provide this type of service, should make liberal provision in space and staff for adequate service not only to indigents, but also to the ever growing number of pay patients. Second, future plans should include ample provision for the vigorous prosecution of medical research. Otherwise the teaching staff may easily be overwhelmed with routine, with a consequent slump in growth. Furthermore, the unusual clinical demands serve as a constant challenge to the student of medicine. Third, since the success of the work is absolutely dependent on skill and devotion of the staff, it is essential that many adjustments in the conditions of teaching must be made. The problem of full time clinical teaching becomes more acute.

Other departments of technical education have had to meet the same situation. Indeed, in the field of agricultural education a very large part of the function has been the providing of service for the public. So much is this true that it would be hard at the present moment to conceive of a college of agriculture without its elaborate organization in the direction of special agricultural service to the state. Within the next few years we may expect in many state universities just such close coordination in the problems of the training of physicians, furthering research that will contribute to the knowledge of the field and extending health service to the public. In the degree that the colleges of medicine of the state universities are alert to these new demands and effective in their responses will they become real leaders in this present movement looking toward the highest type of physical and mental efficiency.

Full-Time Teachers in Clinical Departments

DR. WILLIAM DARRACH, New York: In regard to clinical teachers, there exists considerable ambiguity in the conception of the full-time or university basis, as is evidenced by the widely divergent plans of organization now in force or planned in the various schools of the country. In several medical schools the departments of medicine, surgery and pediatrics are being reorganized on what is spoken of as the "full-time" or "university" basis. It is being widely accepted that such an arrangement is necessary for the best type of teaching, for the most successful clinical investigation and for the most skilful care of the sick. The essential principle of this arrangement is that the dominating group of men in the main clinical departments must be free to concentrate their energies on their university and hospital work. A year ago I was frankly opposed to the university basis being applied to the clinical departments of a medical school. But as a member of a committee which has been earnestly seeking light on medical school organization, I have become completely converted to the principle.

There are two main factors which tend to interfere with this freedom, no matter how sincere the intentions of the men may be. These factors are insufficient assistants and the distractions of private practice. By providing the full-time men with sufficient assistants, professional, clerical, technical and menial, he may relieve himself of such unnecessary details as he desires. He must also be protected from the demands of private practice. The main purpose is to obtain a more truly university type of clinical teacher. The full-time plan is a means to this end—a method by which it may be obtained.

The various so-called full-time plans may be thus summarized: (1) no private practice and no outside employment; (2) private practice at the discretion of the clinician, but no fee paid for such service; (3) as in Plan 2, except that the fee is paid to the university; (4) private practice for fees allowed in such limited amounts that it does not interfere with the thorough, efficient and sincere fulfilment of his academic duties; (5) unlimited private practice within the hospital.

The specific plan which we have proposed and hope to put into effect is as follows: The fundamental principle on which these departments shall be reorganized is that the control of each main clinical department shall be vested in a director, associated with a differentiated group of men who are devoting all their time to the school and hospital, that they may build up and maintain a department in which the best intensive clinical investigation and scientific research may be carried on with the teaching of students and the care of the sick. Of more importance than salary for either type of man is the proper arrangement of his work, so that he shall be freed from unessential details and useless waste of time. In the end the opportunity to carry on teaching and research under wholesome surroundings is the most effective force for bringing into the medical school men of ability and ideals. The head of the department with these associates should form an administrative board, which could relieve him of as much of the administrative details of the hospital and of the teaching as he chose. Unless he is so relieved and protected from the innumerable distractions of departmental matters he will prove sterile as a producer and will soon cease to be the inspiring and stimulating leader so necessary in a department of this kind. These men should have as much time for constructive thought and productive leisure as the head of a large industrial concern. By such a combination and coordination the department would become a well-rounded unit, which should result in great progress along all three lines—research, teaching and care of the sick.

(To be continued)

Reporting Communicable Diseases.—Whenever a physician fails to report a communicable disease, the entire community is unnecessarily exposed to the contagion. Such failure may be attributed to sheer negligence, to wilful disregard of the obligations imposed by statute, or to a mistake in diagnosis.—*Connecticut Health Bull.*, October, 1919.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

January, 1920, **76**, No. 3

*Epidemic Encephalitis and Catatonic Symptoms. E. D. Bond, Philadelphia.—p. 261.
*Histopathologic Findings in Dementia Praecox. E. Rawlings, Talmage, Calif.—p. 265.
War Neuroses: Environment and Events as the Causes. L. V. Briggs, Philadelphia.—p. 285.
Should the Plea of Insanity as a Defense to an Indictment for Crime Be Abolished? C. F. MacDonald, New York.—p. 295.
*Larceny; An Effort to Compensate for Emotional Repression. E. R. Spaulding, Philadelphia.—p. 303.
Proposed Reorganization and Consolidation of State Institutions in Massachusetts. G. M. Kline.—p. 321.
New Jersey Plan in Operation. B. G. Lewis, New Jersey.—p. 335.
Activities of War Risk Insurance Bureau and U. S. P. H. Service Relative to Mentally Disabled Ex-Military Men. W. L. Treadway, Washington, D. C.—p. 349.

Epidemic Encephalitis and Catatonic Symptoms.—Five cases are cited by Bond. He says that his aims in presenting these cases are to inquire into the difficulties in the descriptions of postures and motor symptoms, and to suggest the plausibility of cerebral disturbance as a basis for "catatonic" episodes. In three of the cases, episodic disturbances of the brain were located by cranial nerve involvement; in another case, by this and necropsy. Most important is the fact brought out by these cases that very mild and transient, but definite, symptoms are usually missed in excited, seclusive or indifferent patients. In one case, strabismus went unrecognized at home; another patient, because she had no psychosis, was able to give information which would have been lost in a person less clear. It is interesting that these patients began to improve after dental attention, one after thyroid therapy and one immediately after lumbar puncture.

Histopathologic Findings in Dementia Praecox.—The twelve cases studied by Rawlings gave quite uniform pathologic findings which are due neither to arteriosclerosis, senility nor a long continued grave toxic process. This pathologic process is essentially a chronic one, resulting in an atrophy of the nerve cell body and its nucleus, a disappearance of its stainable substance, an attenuation, with partial fragmentation, of its neurofibrils and an atrophy with distortion of its protoplasmic prolongations; the process terminating in either extreme pyknotic atrophy in which the shrunken cell and its prolongations are seen covered with incrustations or in a fragmentation of the nerve cell to the extent that it is either a shadowy outline or an atrophic nucleus surrounded simply by a fragmented rim of pale granular protoplasm. While no special effort is made by Rawlings to trace the disease process, a general impression is obtained from the study of the various types of cells in all strata that the initial process is one of moderate swelling of both cell body and nucleus followed by a gradual breaking down of the normal nuclear chromatin structure and later, by an atrophy and fragmentation of the neurofibrils with subsequent granular degeneration and irregular clumping of the Nissl granules. The final stage terminates in one of two conditions according to the degree of the vicious influences or the original resistance of the cell, namely, moderate atrophy, followed by more or less acute fragmentation and extreme pyknotic atrophy.

Larceny and Emotional Repression.—The three cases reported by Spaulding represent attempts to compensate for emotional repression, which has been associated with a distressing mental conflict. In the first case, there was an internal fermentation, which bubbled over in an antisocial way when the patient, because of unusual strain in her environment that made her past more oppressive than usual, was unable to obtain an emotional outlet and a feeling of compensation through her religion. That she chose the outlet she did instead of others apparently resulted from the

fact that this particular act typified to her the worst thing she could do and represented an attempt to win back favor and effect a reconciliation. The patient's married life was marred by her difficulty in adjusting herself to marital conditions and her inability to obtain children by adoption. In the third case, emotions had been aroused at an early age in a way in which there was such a strong association to shame that everything even remotely connected with the sexual sphere had in consequence been repressed. The energy that had been repressed as a result of the conflict had expressed itself asocially in several ways, one of which was stealing. The outlets that she chose seemed to furnish her in some way with what is called an illusion of compensation.

American Journal of Public Health, Boston

February, 1920, **10**, No. 2

Economics of Health Administration. H. B. Hemenway, Springfield, Ill.—p. 105.
Popularizing Vital Statistics. C. St. Clair Drake, Springfield, Ill.—p. 112.
*Mosquito Work of Bureau of Entomology. D. L. Van Dine, Mound, La.—p. 116.
*Drainage as an Antimalaria Measure. J. A. LePrince, Memphis.—p. 120.
Sanitation in Serbia. E. Stuart, Paris, France.—p. 124.
Venereal Disease Control: Methods, Obstacles and Results. C. C. Pierce, Washington, D. C.—p. 132.
Rôle of Latrine on Control of Uncinariasis. J. A. Ferrell, New York.—p. 138.
Rôle of Sanitary Privy in Control of Typhid. C. E. Smith, Columbia, Mo.—p. 140.
*Uses, Possibilities and Limitations of Bacteriology in Food Control. E. O. Jordan, Chicago.—p. 142.
Pollution of Deep Wells at Lansing, Mich. E. D. Rich, Lansing.—p. 147.
Studies in Clarification of Milk. C. E. Marshall, Amherst, Mass.—p. 152.
Schools for Health Officers: What Has Been Done at Syracuse. F. W. Sears, Syracuse, N. Y.—p. 155.
Insurance Company in Industrial Hygiene. A. D. Reiley, New York.—p. 160.

Mosquito Work of Bureau of Entomology.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 163.

Drainage as an Antimalaria Measure.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 163.

Bacteriology in Food Control.—In summing up the future outlook for the application of bacteriology in food control, it seems probable to Jordon that increasing emphasis will be laid on bacterial methods as an aid to the interpretation of the sanitary inspection of foodstuffs and as a guide to satisfactory sanitary procedure. Continued laboratory investigation of the two best known instances of so-called "food poisoning" traceable to primary bacterial food contamination, botulism and paratyphoid meat poisoning, seems urgently called for since both are intimately connected with the vital problems of food conservation. Finally, the nature and sanitary significance of the products generated by bacteria, particularly the so-called saprophytic bacteria, in foodstuffs affords a practically untouched field for investigation.

Archives of Dermatology and Syphilology, Chicago

February, 1920, **1**, No. 2

Case of Monilia Candida Infection of Mouth; Moeller's Disease and Others. M. F. Engman and R. S. Weiss, St. Louis.—p. 119.
*Case of Burning Tongue. M. F. Engman, St. Louis.—p. 137.
Syphilis of Liver. U. J. Wile, Ann Arbor.—p. 139.
*Ulcerating Granuloma of Pudenda. H. Goodman, New York.—p. 151.
*Erosive Vulvitis. T. L. Driscoll, Richmond.—p. 170.
*Solar Keratoses and Cutaneous Cancer. J. N. McCoy, Vincennes, Ind.—p. 175.
*Dermatologic Misnomers. M. Scholtz, Los Angeles.—p. 182.

Burning Tongue.—Eleven cases of burning tongue are reported by Engman. None of these patients showed any lesions of the tongue, except enlarged papillae from constant feeling for the sensation against the teeth, and all of them were in an almost terror stricken condition for fear of carcinoma of the tongue. Engman's course of procedure in the treatment of such patients has been to be frank with them by stating that several such instances have been observed, and that the condition is no doubt due to a subconscious fixing of the mind on the anterior portion of the tongue, suggested by some instance which they have not consciously observed—possibly a remark from some one as to cancer of the tongue, or hearing or reading of such cases. It is somewhat similar to the "idée fixée" of French writers. However, one possible cause of this sensation in the anterior portion of the tongue may be inflammation of the lingual tonsil on either side, as was pointed out by Sluder.

Ulcerating Granuloma of Pudenda.—Goodman presents a review of the literature with a bibliography and some observations of the disease as seen in Porto Rico. Four cases of ulcerating granuloma of the pudenda are reported. In three of these cases, *Calimatobacterium granulomatis* was demonstrated for the first time in the United States or its dependencies. In one case, the spirochetal organism described by Wise was observed. Goodman emphasizes that the disease is not syphilis, although it may be associated with syphilitic lesions, or be present in a Wassermann positive syphilitic, free of syphilitic manifestations. Arsphenamin and mercury are ineffective in its treatment. Antimony and potassium tartrate was not given a sufficiently thorough trial to warrant any positive expression of its efficacy.

Erosive Vulvitis.—Three cases of this disease are reported by Driscoll. In each of the three cases, the Wassermann reaction was negative. There was no response to antisyphilitic treatment, including arsphenamin treatment. In each case the characteristic spirochete and fusiform bacilli were isolated from the serum of the ulcers. Driscoll urges that any persistent erosive ulceration with negative Wassermann reaction should be regarded as suspicious, and some of the serum should be obtained for bacteriologic study. If the serum shows spirochetes and fusiform bacilli, the diagnosis is conclusive. The infection might, of course, be superimposed on other lesions of the genitals.

Solar Keratoses and Cutaneous Cancer.—From a study of the clinical histories of patients, McCoy is convinced that cancers of the mucocutaneous margin of the lip, or cancers commencing at that point, are in no way due to solar light. Further, the lips near the margin seem to be immune to the development of keratoses. He has never seen a keratosis at or near the lip margin. He also calls attention to the significant fact that while a large percentage of cutaneous cancers of keratosic origin are of the basal cell type, most cancers of the lip margin are of the cuboidal cell type. However, cutaneous cancer of covered parts is quite rare and, when found, is nearly always traceable to traumatism, while 37.7 per cent. of all cancers, both deep seated and superficial, have occurred on the face (exclusive of the lip margins), the hands and neck, parts exposed to solar light; and that they have attacked persons whose vocations or habits involved insolation to a considerable degree. McCoy agrees with Unna and others that insolation produces keratoses and that these are the most frequent of precancerous lesions. Sixty-two per cent. of his patients were blondes, 7 per cent. were dark-skinned persons, and 31 per cent. were chatains, or persons having a skin only slightly pigmented. In as much as the keratosis is an admitted precancerous lesion, McCoy advises that it should unfailingly be removed.

Dermatologic Misnomers.—Scholtz submits what he terms the most glaringly inconsistent and misleading misnomers of dermatologic nomenclature, such as erythema induratum, erythema nodulare and erythema multiforme, infectious eczematoid dermatitis, dermatitis repens, and other dermatitides, acne rosacea, sycosis vulgaris, etc., and pleads for their revision and correction.

Boston Medical and Surgical Journal

March 4, 1920, **182**, No. 10

Meaning of the Normal. A. L. Johnson, Boston.—p. 237.
Clinical Bacteriology of Pneumostreptococcus Group. D. M. Lewis, New Haven.—p. 240.
Use of Portable Respiration Apparatus. F. G. Benedict, Boston.—p. 243.

Journal of Biological Chemistry, Baltimore

February, 1920, **41**, No. 2

Preparation of *p*-Dimethylaminobenzaldehyd. T. Ingvaldsen and L. Bauman, Iowa City.—p. 145.
Oxidation of Sugars by Mercuric Acetate in Presence of Ammonia. T. Ingvaldsen and L. Bauman, Iowa City.—p. 147.

*Fat-Soluble and Water-Soluble Vitamin Content of Green Plant Tissues. H. Steenbock and E. G. Gross, Madison, Wis.—p. 149.
*V. Thermostability of Fat-Soluble Vitamin in Plant Materials. H. Stenbock and P. W. Boutwell, Madison, Wis.—p. 163.
Phosphorus Requirement of Maintenance in Man. H. C. Sherman, New York—p. 173.
Rôle of Pentose Fermenting Bacteria in Production of Corn Silage. W. H. Peterson and E. B. Fred, Madison, Wis.—p. 181.
*Hydrogen Ion Concentration of Human Duodenum. F. J. Meyers and J. F. McClendon, Minneapolis.—p. 187.
Studies of Acidosis. XV. Carbon Dioxid Content and Capacity in Arterial and Venous Blood Plasma. W. C. Stadie and D. D. Van Slyke, New York.—p. 191.
Effect of Calcium on Composition of Eggs and Carcass of Laying Hens. G. D. Buckner and J. H. Martin, Lexington, Ky.—p. 195.
Modification of Official Chlorin Method for Feeds, Feces, and Urine. J. O. Halverson and E. B. Wells, Wooster, Ohio.—p. 205.
*Comparative Study of Hemoglobin Determination by Various Methods F. S. Robscheit, San Francisco.—p. 209.
*Digestibility of Certain Miscellaneous Vegetable Fats. A. D. Holmes and H. J. Deuel, Jr., Washington, D. C.—p. 227.
*Method for Determination of Methemoglobin in Blood. W. C. Stadie, New York.—p. 237.
Nephelometric Values of Cholesterol and Higher Fatty Acids. II. F. A. Csonka, Pittsburgh.—p. 243.
Heptoses from Gulose and Some of Their Derivatives. F. B. LaForge, Washington, D. C.—p. 251.
*Secretion of Gastric Juice. S. J. Cohen, Chicago.—p. 257.
Direct Quantitative Determination of Potassium and Sodium in Small Quantities of Blood. B. Kramer, Baltimore.—p. 263.

Fat-Soluble Vitamin Content of Green Plant Tissues.—It appears that of the plant structures the leaves are generally richest in the fat-soluble vitamin; some roots are next in order, and last, at least of those investigated by Steenbock and Gross, are grains. Where certain yellow plant pigments occur there fat-soluble vitamins may be looked for. In harmony with this, it is seen that cabbage in the head, containing little pigment, is not to be compared in physiologic activity with the other leafy substances, and of these latter, lettuce, also somewhat etiolated, is the poorest.

Thermostability of Fat-Soluble Vitamin in Plant Materials.—A process of heat treatment, consisting of autoclaving for three hours at 15 pounds pressure, does not destroy any of the fat-soluble vitamin as found in yellow maize. Neither does this treatment cause any noticeable destruction of the vitamin in chard, carrots, sweet potatoes and squash. Experiments by Steenbock and Boutwell demonstrated that the fat-soluble vitamin as found in the plant kingdom in a grain, leaf and stem tissue, fleshly roots, and cucurbital vegetables is comparatively stable at a high temperature.

Hydrogen Ion Concentration of Human Duodenum.—The reaction of the duodenum between three and four hours after meals was usually found to fluctuate around the neutral point, but the extreme range on the acid side was greater than on the alkaline side, possibly due to the spurting of gastric contents into the duodenum.

Value of Hemoglobin Determination by Various Methods.—Various methods used for estimating hemoglobin percentage were compared by Robscheit. The Sahli hemoglobin method, when using the color tubes accompanying the instrument, gives very inaccurate results because of the decided variance in color density of the standard tubes, the result of fading. The Palmer method offers a very satisfactory means of hemoglobin determinations if the standard solutions are freshly prepared. Newcomer's method obviates many difficulties heretofore observed with other procedures, and gives good results with the glass 0.96 mm. in thickness, although the color is quite pale. A method is presented applying Palmer's procedure to Sahli's principle which has proved most satisfactory. It removes the difficulty encountered with Palmer's method, the lack of stability of color in the standard solutions. It has the advantage of an easier color match than that of red tint. The standards prepared have remained sufficiently unchanged for a period of eleven months to insure accurate hemoglobin determinations during this long period.

Digestibility of Certain Vegetable Fats.—The digestibility of several fats and oils has been studied by Holmes and Deuel. The digestibility coefficients obtained were: avocado fat, 87.9 per cent.; cohune oil, 99.1 per cent.; capuassu fat, 94.1 per cent.; hempseed oil, 98.5 per cent.; palm kernel oil, 98.0 per cent., and poppy seed oil, 96.3 per cent. The digestibility of the protein and carbohydrate of the entire ration was essentially the same as that in other experiments of a similar nature, indicating that the fats exercised no unusual effect on the utilization of these constituents. These fats and oils, with the possible exception of capuassu fat, which caused slight disturbances, produced no abnormal physiologic effects, and may be regarded as satisfactory for food purposes. Cohune, hempseed, palm kernel and poppy seed oils especially are very highly utilized by the human body.

Method for Determination of Methemoglobin in Blood.—A colorimetric method for the determination of blood pigments is given by Stadie which is simple and rapid, and which, combined with a simultaneous determination of the hemoglobin by the gasometric method of Van Slyke, gives the methemoglobin content of the blood. The method depends on the fact that both hemoglobin and methemoglobin are changed quantitatively to cyanhemoglobin by dilute solutions of potassium cyanid.

Secretion of Gastric Juice.—Cohen claims that the total chlorids of gastric juice are secreted more or less constantly regardless of the free acidity of the gastric juice. They vary from 0.39 to 0.54 per cent. This may corroborate Pawlow's view that gastric juice is secreted with a constant acidity, and that variations are due to secondary neutralization. A large volume of juice secreted rapidly has a higher acidity than a smaller volume secreted slowly, other factors remaining constant (confirmatory of Pawlow).

Journal of Orthopedic Surgery, Lincoln, Neb.

February, 1920, **18**, No. 2

*Arthritides and Focal Infection. V. P. Gibney, New York.—p. 63.
Chondromas; Report of Cases. H. W. Meyerding, Rochester, Mnn.—p. 77.
Focal Putrefactions and Their Bearing on Osteoarthritis and Other Diseases. S. L. McCurdy, Pittsburgh.—p. 92.

Arthritides and Focal Infection.—Some of the points emphasized by Gibney are: A focus of infection should be diligently sought for in every case of arthritis where tuberculosis, malignancy or trauma are not self-evident as causes or at least controlling factors. While the finding of a focus and the proper handling of the same may not be followed sooner or later by relief, it cannot be assumed that the infection is at an end. The arrest of the infection does not mean that the exudates in and around a joint will disappear unless orthopedic measures are employed to bring about resolution and restoration of function. The finding of one focus does not mean that this is the only focus bearing on the case. Many organs are exposed to bacteria of a pus producing nature, and that a careful study of these organs should be the rule.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

January, 1920, **14**, No. 5

Constituents of Lathyrus Sativus Seeds and Their Action. W. J. Dilling, Glasgow, Scotland.—p. 359.
*Restoration of Frog's Heart in Chloroform Poisoning. F. Ransom, London, England.—p. 367.
*Anaphylactoid Phenomena from Intravenous Administration of Various Colloids, Arsenicals and Other Agents. P. J. Hanzlik and H. T. Karsner, Cleveland.—p. 379.

Restoration of Heart in Chloroform Poisoning.—It is shown by Ransom in perfusion experiments that frogs' hearts depressed by chloroform may be restored to nearly or in some cases quite normal activity by adding to the chloroform solution small quantities of epinephrin, tyramin, strophanthus, diuretin, caffein or strontium chlorid (pituitary extract failed). In the case of epinephrin and tyramin, the restored hearts will continue beating well in the presence of toxic amounts of chloroform for some hours. The other substances when added to the chloroform solution cause, first, restoration and then characteristic toxic symptoms of their own, but this latter difficulty may be overcome if, as soon as restoration has taken place, the perfusion fluid is changed to plain Ringer's solution. By this method of giving a small quantity of the antagonist and following with plain Ringer's solution restoration is much quicker than when the chloroform is simply washed away.

Anaphylactoid Phenomena from Intravenous Administration of Colloids, Arsenicals and Other Agents.—Mild ether

anesthesia and the intravenous injection of physiologic sodium chlorid solution are practically harmless to the circulatory and respiratory systems of guinea-pigs, but the remaining twenty-nine of the thirty-one agents studied by Hanzlik and Karsner were found to be distinctly harmful in varying degrees. The results obtained by the authors are decidedly against the promiscuous and unwarranted use of the intravenous method of administering drugs as a routine therapeutic measure, particularly for new and untried remedies or those of doubtful efficacy, and even those which chemically and pharmacologically appear to be inert or inactive. When taken together with the explanations supplemented throughout the text, these results indicate that it is quite erroneous to regard the disturbances produced by the intravenous injection of sundry agents in the same category with true anaphylaxis or bearing any causal relationship to it whatsoever, or vice versa. On the basis of the results obtained with atropin and epinephrin, Hanzlik and Karsner claim that the mechanism of action of agar and similar agents bears no relationship to true anaphylaxis or anaphylactic shock.

Medical Record, New York

Feb. 28, 1920, **97**, No. 9

Treatment and Management of Neurasthenic Individual. C. F. Neu, Indianapolis.—p. 341.
Cancer Enigma. R. Bell, London, England.—p. 346.
Blood Counts in Diagnosis and Treatment. Greeley, Brooklyn.—p. 348.
Focal Infections of Head as Sources of Systemic Diseases. J. J. King, New York.—p. 353.
Anesthetics in Obstetrics with Special Reference to Nitrous Oxid. R. C. Coburn, New York.—p. 356.
Willems' Method of Active Mobilization in Surgical Joints. E. B. Mumford, Indianapolis.—p. 357.

Military Surgeon, Washington, D. C.

February, 1920, **46**, No. 2

Constipation as an Army Problem. W. R. Woodbury, M. C., U. S. Army.—p. 119.
*Sputum-Borne Disease Transmission with Epidemiologic and Bacteriologic Research. J. G. Cumming, M. C., U. S. Army.—p. 150.
Museum and Art Service. L. B. Wilson, Rochester, Minn—p 165.
*Six Cases of Traumatic Aneurysm. R. E. Flannery, Chicago, and A. R. Tormey, Madison Wis.—p. 173.
Comments on Army Field Ration. C. C. Mason, S. C., U. S. Army.—p. 178.
Treatment of Catarrhal Deafness. P. Rice, San Francisco.—p. 185.
Military Hygiene. A. L. Benedict, Buffalo.—p. 191.
Cases of Seasonal Hay-Fever Diagnosed and Treated with Pollen Extracts. W. C. Williams, S. C., U. S. Army.—p. 199.

Sputum Borne Disease Transmission.—This experimental research shows the facility with which a nonpathogenic organism may be transmitted from donor to recipient through the use of warm mess-kit wash water. The results of these tests, in conjunction with the epidemiologic research, indicate that mess-kit water was the most prolific source of distribution of pathogenic organisms and virus infections among troops. These results are wholly corroborative of the previously advanced theory of transmission through warm mess-kit wash water, and the paramount importance of the use of boiling water as a means of closing the major avenue of disease distribution.

Traumatic Aneurysm.—Of the six cases reported by Flannery and Tormey, three were arteriovenous, one was arterial, one was venous and one was diffuse. Four patients were discharged, cured; one patient died of meningitis, secondary to compound comminuted fracture of skull, and one died of shock, following loss of blood after operation. All vessels involved were ligated following long periods of complete rest, immobilization and pressure over the mass. The period of rest, varying from eleven to sixty-two days (an average of thirty-three and five-tenths days), was sufficient to allow collateral circulation to become fully established, thereby diminishing the risk of postoperative gangrene. The authors insists that it is essential that all clots be removed, thereby relieving pressure on the remaining vessels and lessening the chances of gangrene from the interference of circulation below. Postoperative treatment is very important: (*a*) The wound should have a large, soft, sterile dressing applied. (*b*) The extremity should be allowed to lie in its natural position. Splints are contraindicated, as pressure necrosis is apt to occur. (*c*) No hot-water bags should be used, except to warm the bed before the patient is returned from the operating pavilion, as sloughing may occur in those parts of the extremities in which collateral circulation is not fully established. (*d*) If heat is thought necessary to aid the circulation in the extremity, the therapeutic light is advised.

Modern Medicine, Chicago

February, 1920, **2**, No. 2

Rehabilitation in Its Relation to Physician. A. C. Burnham, New York.—p. 93.
Sanitarian's Definition of Living Wage. D. B. Armstrong, Framingham, Mass.—p. 96.
Medical Service in Hotels. E. M. Statler, Buffalo.—p. 102.
Medical Aspects of Health Insurance Administration. E. H. Lewinski-Corwin, New York.—p. 113.
Status of Influenza. D. M. Lewis, New Haven.—p. 116.
So-Called Shell Shock in Great War. T. A. Williams, Washington, D. C.—p. 121.
Simple Goiter; Public Health Problem. P. C. McCord and R. G. Walker, Cincinnati.—p. 124.
Human Engineering; New Medical Speciality. F. L. Rector, Brooklyn.—p. 133.
Emergency Service of J. I. Case Threshing Machine Company. J. E. Konnak, Racine.—p. 136.
Restaurant Facilities for Shipyard Workers. F. S. Crum, Philadelphia.—p. 138.
Relation of Medical Department to Company. H. W. Cook, Minneapolis.—p. 142.
Practical Application of Immunity in Tuberculosis. W. H. Watterson, Washington, D. C.—p. 152.
*Coating for Poison Tablets for Prevention of Accidental Poisoning. G. Phillips, Brooklyn.—p. 155.
Medical Inspection in Big Horn Country, Montana. W. A. Russell, Hardin, Mont.—p. 159.
Hospital and Health Survey. H. Wright, Cleveland.—p. 160.
Neurologic Girl. J. Taft, Philadelphia.—p. 162.
Women Seek Careers in School of Occupational Therapy. M. Neall, Philadelphia.—p. 170.
Law for the Doctor. L. Childs, Indianapolis.—p. 1723.

Coating for Poison Tablets to Prevent Accidental Poisoning.—Phillips has developed a coating intended to render poison tablets innocuous when swallowed, but which interferes in no way with their use for making germicidal solutions. The contrivance consists of a coating of wax, the wax having a melting point above the highest climatic temperature, one which is not brittle and, therefore, which will not crack or scale from the tablet in handling; and, above all, which not only is insoluble in water, but is not affected by the digestive juices. Tablets coated with such a wax pass through the alimentary tract unchanged and consequently prevent any solution or absorption of the tablet substance while in the body. By breaking the tablets they may be dissolved readily when it is desired to prepare solutions from them. After many trials during which a large variety of substances has been rejected as unsuitable for this purpose, a coating has been developed which not only satisfies all theoretical requirements but which meets every demand for practicability. By mixing equal parts by weight of candelilla wax and a paraffin having a melting point of 56 C., a wax is obtained which melts at 70 C., which has a low coefficient of expansion and, therefore, little brittleness, which is unaffected by dilute acids and alkalies and which is not attacked by digestive ferments. Furthermore, the device presents no serious difficulties as to the manufacture. The machines employed for coating pills with gelatin are equally well adapted for applying the wax coating to tablets, while the combined cost of the materials and the process for quantity production is negligible. The perfected coating has the added advantages of protecting the tablet from moisture, and from breaking or crumbling in the container. Deterioration is prevented, and exact dosage is assured.

Philippine Journal of Science, Manila

September, 1919, **15**, No. 3

Physiochemical Valoration of Tikitiki (Rice Polishings) Extract. M. V. del Rosario and Joaquin Maranon.—p. 221.
Kwangtung Flora. E. D. Merrill.—p. 225.
Hoya Imbricata Callery Ex Decasine and Hoya Pseudomaxima Kds. in the Philippines. S. H. Koorders.—p. 263.
Black Halictine Bees of Philippine Islands. T. D. A. Cockerell.—p. 269.
Swarming of Anopheline Mosquitoes. C. S. Banks.—p. 283.
Two Philippine Leaf Mining Buprestids, One Being New. C. S. Banks.—p. 289.
Fulgoroidea, II: Genus Trobolophya. C. F. Baker.—p. 301.
Soy Sauce Manufacturing in Kwangtung, China. E. H. Groff.—p. 307.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Indian Journal of Medical Research, Calcutta

January, 1920, **6**, No. 3

*Anaphylactic Reactions in Course of Antirabic Treatment. J. W. Cornwall.—p. 237.
*Pharmacodynamics of Quinin. R. McCarrison and J. W. Cornwall. —p. 248.
*Study of Distribution of Bagdad Boils on Body Made with View to Discover Transmitting Agent. H. W. Acton.—p. 262.
*Pathogenesis of Deficiency Disease. R. McCarrison.—p. 275.
Bacteriology of Prevailing Epidemic in Bombay; Technic of Isolating and Growing Microbe in Bulk. R. Row.—p. 356.
*Treatment of Various Types of Endameba Dysenterica Infection by Combined Hypodermic and Oral Administration of Emetin Hydrochlorid. W. MacAdam.—p. 363.
Enteromonas Found in Human Intestinal Contents. G. C. Chatterjee. —p. 380.
*Production of an Influenza Vaccine. W. F. Harvey, H. C. Brown and J. Cunningham.—p. 383.
Endolimax Williamsi: Ameboid Form of Iodin Cysts. S. L. Brug. —p. 386.
*Studies in Ankylostomiasis. G. R. Wrench.—p. 393.
Bacteriologic Examination of Accessory Sinuses of Nose, Middle Ear, and Cerebrospinal Fluid in Cases of Influenza. E. D. W. Greig and G. C. Maitra.—p. 399.
*Preparation of Two Mediums for Growth of B. Influenza (Pfeiffer). G. L. Liston.—p. 418.

Anaphylactic Reactions in Course of Antirabic Treatment.—It is suggested by Cornwall that the local cutaneous and subcutaneous tissue reaction, the general dermal reaction, the general systemic reaction in the form of malaise and a reaction of the central nervous system in the form of temporary heart failure, occipital pain and nausea, occurring in the course of antirabic treatment are anaphylactic in nature. The antigen may be either normal brain matter or the products of metabolism of the rabies organism. Attempts to reproduce the central nervous system reaction in rabbits have so far been unsuccessful. Similarly, attempts to demonstrate a state of shock in sheep were without success. In untreated sheep intravenous injections of fixed virus brain extracts caused greater disturbance of the cardiovascular and respiratory centers than extracts of normal brain substance. These disturbances are not invariable whether fixed virus brain extracts or normal brain extracts are injected.

Pharmacodynamics of Quinin.—An experimental investigation made by McCarrison and Cornwall showed that the usual salts of quinin employed for intravenous medication are dangerous to life if given in large doses. The respiratory center is more gravely affected than the cardiac center. The acid hydrobromid is less noxious in its action on the respiratory center than the hydrochlorids of quinin. All the salts of quinin employed caused a profound fall of blood pressure not accompanied by a cessation, or even much diminution in the strength of the heart beat, except in two instances in which the respiratory center failed. The fall of blood pressure is usually recovered from in four or five minutes, but the period of cardiovascular depression may last for a considerable time. The dilution of the quinin with a large volume of salt solution does not compensate for its depressor action: nor does dilution with 6 per cent. gum arabic solution. The authors advise that intravenous injections of quinin should be given very slowly. They should be administered with great caution when the general condition of the patient is bad and when the blood pressure is low. All such injections should be controlled by blood pressure observations. Epinephrin, given intravenously with the quinin, is able to counteract, to some extent, the immediate and dangerous fall of pressure which may result from quinin alone. The intravenous employment of quinin should be reserved for cases of special urgency, and where possible the hydrobromid, in doses not exceeding 15 grains, should be used, and the injection combined with not more than 0.3 c.c. of the commercial solution of epinephrin in all cases where the blood pressure is less than 100 mm. of mercury. These experiments indicate that quinin is a much more poisonous drug than is generally supposed, and that the massive dosage so generally employed today cannot fail to depress, by whatever route administered, the cardiovascular and respiratory systems, and to retard the development of that natural immunity on which the cure of the disease is dependent.

Transmitting Agent of Bagdad Boils.—From the fact that the Bagdad boil is only found on exposed parts of the body, Acton is led to believe that the transmitting agent is some blood sucking diptera. The distribution of these Bagdad sores corresponds more closely with sandfly bites than with the bites of other blood sucking diptera.

Pathogenesis of Deficiency Disease.—After having made a very detailed study of this subject, the results of which are given in full, McCarrison is convinced that the absence of certain accessory food factors from the dietary—improperly termed "antineuritic"—leads not only to functional and degenerative changes in the central nervous system but to similar changes in every organ and tissue of the body. The morbid state to which their absence gives rise is not a neuritis. The symptom-complex resulting from the absence of these substances, is due (*a*) to chronic inanition, (*b*) to derangement of function of the organs of digestion and assimilation, (*c*) to disordered endocrine function especially of the suprarenal glands, and (*d*) to malnutrition of the nervous system. Certain organs undergo hypertrophy; others atrophy. Those which hypertrophy are the suprarenals. Those which atrophy, and in the order of severity named, are the thymus, the testicles, the spleen, the ovaries, the pancreas, the heart, the liver, the kidneys, the stomach, the thyroid and the brain. The pituitary gland showed a slight tendency to enlargement in adult male pigeons only. Gastric, intestinal, biliary and pancreatic disorders are important consequences of a dietary too rich in starch and too poor in vitamins; this state is due to the imperfect metabolism of carbohydrates and to acid fermentation of starches in the intestinal tract. Clinically, it is evidenced in pigeons by progressive slowing and deepening of the respirations. Great atrophy of muscular tissue results from deficiency of antineuritic vitamins; it is due, in part, to the disturbance of carbohydrate metabolism in consequence of disordered endocrine function, in part to the action of the suprarenals in supplying blood to the vegetative organs of the body at the expense of the muscles. The central nervous system atrophies little: the paralytic symptoms are due mainly to impaired functional activity of nerve cells; much more rarely to their degeneration. It is thought that because of their atrophy out of all proportion to other tissues the thymus, the testicles, the ovaries and the spleen provide a reserve of accessory food factors for use on occasions of metabolic stress. This reserve, however, is rapidly exhausted. The bones are thinned and there is a loss of bone marrow. The red cells of the blood are diminished by about 25 per cent. The whole morbid process is believed to be the result of nuclear starvation of all tissue cells. Finally, although deficiency of certain accessory food factors is the essential etiologic factor in the genesis of beriberi, it is held that infectious and parasitic agencies may often be important causes determining the onset of symptoms. Vitaminic deficiency renders the body very liable to be overrun by the rank growth of bacteria. It is probable that varying metabolic disturbances may determine the character of these growths.

Treatment of Endameba Dysenterica Infection by Emetin Hydrochlorid.—Eighty cases of *Endameba dysenterica* infection have been treated by MacAdam by a course of 18 grains of emetin, spread over twelve days, 1 grain being given hypodermically and ½ grain orally each day. The endameba of both primary dysenteric attacks and of acute relapses disappeared on the average in one and one-half days; while the average period of persistence of infection in cyst carriers was two and one-half days. The symptoms in the acute cases rapidly disappeared also, their average duration being four days. Eighteen of the eighty cases showed signs of persistent infection during the laboratory examinations. Eleven of these relapses occurred among thirty-six chronic dysenteries. Thirteen of the eighteen relapses occurred within four weeks of the completion of treatment. There was no difference between the time of relapse of acute cases

and of cyst carriers. These results show a considerable improvement on those obtained after a course of emetin by injection alone; while they compare favorably with the results obtained by various workers after full courses of emetin bismuth iodid.

Production of Influenza Vaccine.—Harvey and his associates found that the bacillus of influenza in symbiosis with either *Pneumococcus* or *Streptococcus pyogenes* grows much more luxuriantly than in unmixed culture. The fact of a culture's being mixed is no bar to its use for vaccine purposes, when the mixture contains the components required. The mixed organisms are easily separated by plate methods. The symbiotic method seems to afford a simpler method of obtaining a good yield than the preparation of a complicated medium.

Value of Drugs Used in Treatment of Ankylostomiasis.—The drugs ordinarily used in the treatment of ankylostomiasis were investigated by Wrench and his observations lead him to conclude that the "cures" of ankylostomiasis, so frequently reported and in such large numbers, are not justified in the name, if cure means freedom of the stools from ova. Research is necessary to determine and standardize what is meant by a cure, and then to discover, if possible, a means of cure which is practicable for present purposes. Chenopodium oil is a dangerous drug. In 151 treatments there were thirty-two instances of vomiting, many cases of giddiness and occasionally slight collapse. On nine occasions two capsules only could be given as a treatment and on one occasion one capsule only could be given. Manson's mixture failed to "cure" a single case. Thymol, Wrench says, is superior to Manson's mixture, and inferior to chenopodium oil. As a means of sterilization, thymol is unreliable. The following drugs were also tested in from five to ten cases each: methylene blue, embelia ribes, veronia anthelmintica, butea seeds, various bitters, camphor in combination with menthol and thymol, turpentine, clove oil, peppermint oil, and copaiba. None of these drugs, except turpentine, effected a cure. Turpentine, given in 20 minim doses, three times a day, to seven patients for ten days, "cured" one patient.

Culture Mediums for Growth of B. Influenzae (Pfeiffer).—The two mediums described by Liston were prepared by his assistants, Soparkar and Gore. One medium consists of ordinary nutriment agar mixed with a preparation of human blood. The other medium is almost identical with Mathew's medium.

Bulletin de l'Académie de Médecine, Paris

Jan. 20, 1920, **83**, No. 3

*Lethargic Encephalitis. C. Achard.—p. 67; Idem. Combemale and E. Duhot.—p. 71.
*Comparative Wassermann Tests. C. Simon.—p. 73.
Trachoma at Marseilles. Aubaret.—p. 75.
*Poisonous Mushroom. A. Sartory.—p. 76.

Lethargic Encephalitis.—Summarized in Paris Letter, p. 748.

Comparative Wassermann Test in Blood and Urine.—Simon applied the Bordet-Wassermann test to the blood serum and the urine of 166 syphilitics and 35 healthy persons. The reaction was parallel in both blood and urine in 53 per cent., and it was positive in the urine and negative in the blood in 15 cases; positive in the blood and negative in the urine in 62 cases. The positive reaction in the urine was obtained in larger proportions of cases the longer the interval since infection. It seems rational, he says, that treatment should be continued until the reaction is negative in the urine as well as in the blood and spinal fluid. The findings were constantly negative in the healthy controls except that the urine of one man of 70 gave a positive reaction while the blood serum was negative.

Poisonous Mushrooms.—Sartory warns of the extremely poisonous nature of *Tricholoma tigrinum Sch.*, and describes the features of the poisoning therefrom, and means to identify this mushroom. It is particularly dangerous on account of its close resemblance to the edible terreum groups.

Bulletin Médical, Paris

Jan. 21, 1920, **34**, No. 4

*Teaching of Dermatology at Paris. A. J. L. Brocq.—p. 55.
*Anaphylaxis from Pancreas Insufficiency. M. Nathan.—p. 59.

Teaching of Skin and Venereal Diseases at Paris.—Brocq comments on the danger that either dermatology or venerology will predominate, to the practical exclusion of the other, when there is only one chair for both, as is the case at Paris. He mentions Fournier's incumbency as an example.

Anaphylaxis from Pancreas Insufficiency.—Nathan cites Lesné's experimental research which demonstrated that egg albumin injected into a sensitized animal induced anaphylaxis even after it had been digested with pepsin. But when the egg albumin had been subjected to the action of pancreatic juice, there were no signs of anaphylaxis. This experimental experience has been duplicated in a clinical case, Nathan here reports, in which a boy of 8 had always had diarrhea, rash and eruptions after eating eggs or any dish made with eggs. Examination of the stools showed defective functioning of the pancreas, and the child was given 40 cg. of pancreas extract daily, and dishes made with eggs and gradually whole eggs were added to his diet, with no further signs of intolerance. Whenever the pancreas extract was dropped, the symptoms of anaphylaxis reappeared, but under pancreas extract treatment conditions have been kept normal during the two years to date. Lesné has had a similar experience, the child finally outgrowing the tendency after a few months and not requiring the pancreas treatment further. When the stools show incomplete digestion of muscle fibers, this may give the clue to successful treatment of a certain class of cases of alimentary anaphylaxis.

Jan. 24, 1920, **34**, No. 5

*Lethargic Encephalitis. D. Denéchau.—p. 69.

Lethargic Encephalitis.—Denéchau remarks, in commenting on the four cases in his own practice, that the mortality was 37 per cent. in the twenty-nine cases reported at the Société médicale des hôpitaux. Only nine survived of the eighteen cases followed to date, and four were left with contractures or uncertain gait, ptosis or persisting somnolency. Only five seemed to have recovered completely by the third or fourth month. One died in his own four cases, and one, ten months later, still has paralysis of the two internal rectus muscles, tremor, and cerebellar disturbances in gait, etc. The others, seen last at the fifth month, still displayed numerous sequelae. Dieting and hygiene are the main reliance, but Netter and Lhermitte have reported good results from hexamethylenamin by the vein and by the mouth, with repeated lumbar puncture aiming to draw the drug into the subarachnoid spaces.

Journal de Médecine de Bordeaux

Jan. 25, 1920, **91**, No. 2

*Disability after Injury of the Skull. H. Verger.—p. 31.
*Tardy Tetanus. H. L. Rocher.—p. 37.
*Sudden Death after Fracture of Long Bone. R. Villar.—p. 43.
Clinical Pictures with Trauma of the Brain. H. Duret.—p. 52.

Disability After Injury of the Skull.—Verger enumerates the different forms of permanent disability after trauma of the brain, and their evaluation from the pension standpoint. When the disturbances are vague and are of the concussion type or traumatic neuroses, the majority recover in time. Preexisting syphilis, atheroma, or alcoholism, reducing the resisting powers and providing points of lesser resistance, form another group in which the evaluation of the disability is more difficult. The courts here go farther than medicine can follow. They assume that the traumatism must be incriminated for the disability, as when paretic dementia develops in a syphilitic after an accident, if the medicolegal experts are unable to affirm positively that the paretic dementia would have developed without the trauma. The medicolegal expert thus has his task reversed: Instead of establishing the presumption between cause and effect, he has to seek for proof to the contrary.

Tardy Tetanus.—In Rocher's seven cases the tetanus developed from seventeen to sixty-four days after the wound and

two injections of antiserum. They teach that preventive antiserotherapy should be kept up until all the scraps of foreign bodies have been removed.

Sudden Death After Fractures.—Villar excludes fat embolism in his three cases of death after fracture of long bones, as fat embolism is so rare. Even with the extensive fractures of the war and curetting the marrow cavity, fat embolism very seldom occurred. It develops also in the first few days, and death does not follow until several hours after the first symptoms. The robust men in his cases died in from five to fifteen minutes after the fractured right tibia and fibula had been examined and the callus palpated, or the man had been sitting up in bed to wash his face. Embolism from thrombosis would explain the fatal phenomena. They warn that thrombosis should be suspected in all cases of fracture, especially when the edema persists, and the possibility of embolism therefrom should guide the management of the case.

Journal de Radiologie et d'Electrologie, Paris

December, 1919, **3**, No. 11

*Technic for Radium Treatment. C. Regaud and R. Ferroux.—p. 481.
*Radium Emanations in Ampules. S. Laborde.—p. 501.
*Roentgen-Ray Treatment of Pituitary Tumors. M. Jaugeas.—p. 508.
Practical Notes and New Instruments. Strohl and others.—pp. 516-519.

Technic and Record of Radium Treatment.—Regaud and Ferroux are in charge of the *Institut du Radium* at Paris which lends out radium tubes, and they emphasize the importance of a uniform style of record for all radium work. The quantity or dose is the product of the intensity multiplied by the time, but greater precision is realized when the dose (with radium emanations) is calculated from the millicuries lost during the application, that is, the difference between the millicurie power of the tube before and after. With radium itself, by the loss in emanations, that is, the emanations destroyed in the course of an hour (calculated by multiplying the weight in milligrams by the constant 0.00751). The filter, the area exposed, the distance, etc., must be recorded separately.

Condensed Radium Emanations.—Laborde is in charge of the radium service at the Hôpital Villemin, and he reports his experience with radium emanations in closed ampules. Of course they cannot compete with radium itself, but they have many advantages, especially that they can be supplied in any shape to fit any lesion, as in the form of a number of fine needles to be driven into a deep neoplasm. He has found that the annoying feature of the progressive loss of energy when emanations were used was often counterbalanced by the lesser risk from loss of the capsule.

Radiotherapy of Pituitary Tumors.—The death of Jaugeas was reported recently. He said in this article that the action of the roentgen rays can be estimated with greater precision in the effect on a tumor in the hypophysis region than in any other field of application of deep irradiation. The changes in the visual field parallel the benefit otherwise, and form a gage for the efficacy of the treatment. He describes a case of tumor in the pituitary with acromegaly in a woman of 25. The history of the case is shown by the charts of the field of vision at one and two year intervals, the visual acuteness finally approximating normal. Similar findings in another case rayed in 1914 show that the benefit has been permanent, so that the term "cure" is not out of place applied to such cases. The visual acuity is even better now, five years later, than when the patient was first dismissed. The acromegaly has not retrogressed, but it was arrested. Roentgen-ray treatment in these cases has to be applied early, when symptoms of hyperactivity become manifest, before the elements of the gland are destroyed. The raying must be cautious, to refrain from destroying the functional elements, as otherwise symptoms of deficiency would follow, analogous to experiences with the thyroid. The pulse in exophthalmic goiter and the visual field with pituitary tumors should be the guide to treatment. It should be suspended when these findings enter a stationary phase. It can be resumed if headache and impairment of vision indicate a new *poussée évolutive*. The exposures should thus be given and suspended according to the individual findings from week to week, without any arbitrary regularity.

Lyon Médical

Jan. 25, 1920, **129**, No. 2

*Dissociated Retention of Elements of the Bile. L. Bouchut and Lamy.—p. 53.
*Radioscopy in Diagnosis of Tuberculosis. A. Dumas and A. Corone.—p. 61.

Dissociated Retention of Bile Elements.—Bouchut and Lamy explain the progressive jaundice in the case they report as the result of injury of the liver cell itself. The urine abounded in bile pigments but no bile salts were found in it, while the stools were clay colored and there was nothing at the time or in the history to suggest gallstones. Hemolytic jaundice could also be excluded, but there were indications of alcoholism, and necropsy confirmed the liver disease, revealing cirrhosis of the hypertrophic, alcoholic type in the woman of 47, a cook. They describe how the conception of dissociated elimination of the elements of the bile throws light on a number of clinical pictures in which jaundice is a prominent symptom. Nothing but defective secretion or excretion in the liver itself will explain dissociated retention. Lyon and others have confirmed this experimentally with phosphorus, and with injection of cytotoxins acting on the liver. By thus electively injuring the liver cells, they induced dissociated retention just as it is observed in the clinic.

Radioscopy in Tuberculosis.—Dumas and Corone summarize their conclusions from roentgen-ray examination of 2,000 men suspected of pleuropulmonary tuberculosis at Saloniki in 1918. They emphasize that there is no pathognomonic picture, and that the greatest value of radioscopy is when the findings are negative. In the established cases, it yields important information as to the extent, evolution, etc., and in dubious cases may reveal a lesion when auscultation is negative.

Paris Médical

Jan. 10, 1920, **10**, No. 2

*Rating Disability. R. Van Roy.—p. 37.
*Catarrhal Jaundice. E. Chabrol and J. Dumont.—p. 41.
*Urticaria from Emetin. R. Savignac and A. Alivisatos.—p. 43.
*Hemoglobin Reactions. L. Boyer.—p. 47.

Rating Disability.—Van Roy discusses the standards adopted by the French government and Belgium, and shows certain inconsistencies in the figures for the fingers and metacarpus.

Familial Epidemic of Catarrhal Jaundice.—The three cases in the family indicated an unmistakable infectious origin. A few spirochetes were found in the urine of one child but not in the others. The spirochetes did not show the characteristics of the icterohemorrhagiae type, and serologic tests were negative, as also with all other micro-organisms which have been incriminated in the etiology of infectious jaundice.

Emetin Urticaria.—Savignac found emetin in the urine up to three months after the last injection, and hence thinks there can be no doubt that it was responsible for the urticaria which developed fifteen days after some of the later injections, subsiding as they were suspended and returning on resumption of the drug. The urticaria at first was in the region of the injections but later became symmetrical and finally general. The last attack of urticaria occurred five months after the close of the emetin course (1919) and there has been no recurrence since. During the course there was also an attack of neuritis in one arm, but the chronic dysentery seemed to be finally cured by the treatment which had been continued at intervals for nearly a year.

Hemoglobin Reactions.—Boyer describes a number of reactions with hemoglobin and peroxidases with various stains, and commends particularly for detection of blood a mixture of diamino or triaminotriphenylmethane, sodium acetate, acetic acid, and zinc. The reaction is based on the peroxidating faculty of oxyhemoglobin or its derivatives, and avoids the errors with other reactions of the kind.

Presse Médicale, Paris

Jan. 14, 1920, **28**, No. 4

*Treatment of Puerperal Infection. F. M. Cadenat.—p. **33**.
*Tuberculosis of the Spine in Adults. J. Doche.—p. **35**.

Vaginal Hysterectomy for Puerperal Infection.—Cadenat asserts that too many women die from puerperal infection. Aside from the fulminating fatal cases, there are many, he declares, that might be saved by early vaginal hysterectomy, and he describes with illustrations the exact technic for this, saying that it takes only from three to fifteen minutes in experienced hands; avoids contamination of the peritoneum, and insures ample drainage. It should be done whenever there is no appreciable improvement in twenty-four hours after clearing out the uterus with the curet, the temperature keeping high, with chills, and the pulse fast. The fear of injuring the bladder should not deter from the operation. It is better to have the patient live, even with a vesicovaginal fistula, than die because we are too timid to remove the focus of the infection.

Pott's Disease in Adults.—Doche found no tenderness on pressure in about 33 per cent. of thirty-one cases of caries of vertebrae in the dorsal region, and in 25 per cent. of 102 in the lumbar region in his 140 cases of Pott's disease in soldiers. Many of the men had been treated for months and even years for neuralgias of different kinds, gastralgia, kidney and liver colic, sciatica and torticollis, before any one had thought of incriminating the spine. Lateral curvature was evident in thirty of the 140 cases, and two thirds of the men were unable to bend the trunk forward or sideways, but not one of the total number was able to stretch his spine; hyperextension was absolutely blocked. All were given the regular helio-marine course of treatment at the sanatorium in his charge at Arcachon, and all without fistulas recovered, while the mortality was high among the men with infected fistulas. A tragic feature was that, among the forty-three with fistulas, in some they had been deliberately induced by opening up a closed and cold abscess in the iliac or lumbar region. The strain and privations of the war had reduced the vitality, but notwithstanding this the results of treatment were uniformly good when there was not some grave tuberculous lesion elsewhere or a spontaneous or operative fistula. Immobilization was with a cast in two parts. The front part was removed for the general sun bath; then it was replaced and the patient turned over, and the posterior part of the cast removed for exposure to the sun anew. Thus the sun baths were total while the immobilization was complete throughout. The neuralgic pains were not modified by the heliotherapy, and sometimes they compelled extension. All were kept reclining until six or eight months had elapsed since the last clinical symptoms. The abscesses were punctured; spontaneous resorption was very rare. In the cases with infected fistula, ample drainage and irrigation by the Carrel-Dakin method seem to offer a promise of better results, but his experience with this is too recent for a decisive judgement.

Progrès Médical, Paris

Jan. 4, 1920, **35**, No. 1

*Tumors in Greater Omentum. A. Aimes.—p. 1.
Syphilitic Disease of the Stomach. M. L. Ramond.—p. **7**.

Jan. 31, 1920, **35**, No. 5

Treatment of Epidemic Meningitis. Aynaud.—p. 45.
Test for Sulphur in Urine. Rabaut and Stillmunkés.—p. **50**.

Tumors in the Omentum.—Aimes classifies thirteen varieties of tumors found in the greater omentum, citing cases from international literature, and discussing the symptoms. The malignant tumors are large and very vascular by the time they reach the surgeon, and 25 per cent. of the patients succumbed to the operation, and only two lived for over a year. All forms of omental tumors demand prompt operative removal, he reiterates.

Revue de Médecine, Paris

September-October, 1919, **36**, No. 5

*Generalized Muscular Atrophy After Concussion. A. Leri, J. Froment and Mahar.—p. 481.
*Tender Point in Neck with Abdominal Disease. A. Cade and G. Parturier.—p. 495.
*Malignant Slow Endocarditis. R. Debré.—p. 508. Conc'n.
*Maternal Serotherapy in Hemophilia. J. Chalier.—p. 522.
*Sequence of Psychopathologic Phenomena. R. Benon.—p. 531.

Atrophy of Muscle from Concussion.—The shell concussion without direct injury was followed by complete muscular impotency for three months, and muscular atrophy developed and became generalized, but it has gradually receded in the course of the years.

Tender Points in Neck with Abdominal Disease.—Cade and Parturier report experiences which seem to show that the point in the neck where several nerves are accessible to pressure becomes tender when there is some painful pathologic condition in the upper region of the abdomen, on that side. This tender point on the right side coincided with painful disease in liver or gallbladder, especially from gallstones. When the tender point was exclusively or predominantly on the left side, it coincided with painful disease in the stomach or duodenum. In some of the cases reported, the organic lesion was an ulcer or cancer or cicatricial stenosis with fibrous bands. The tender points in the neck may be found with neuralgia or other nervous affections, but in these conditions the tenderness is bilateral and alike on both sides, and it subsides under atropin. The absence of the tender point does not exclude organic disease, as the causal lesion may be in a period of remission, even with a gastric cancer. The point in question is at the base of the neck, between the two heads of the sternocleidomastoid muscle. Several nerves pass here, and the cervical ganglion is anchored in the depths. Among the twenty-nine persons tested, the point was never tender with simple ptosis or simple enlargement of any organ.

Slow Endocarditis.—Debré here concludes his long report of his study of malignant endocarditis running a protracted course. The streptococcus in the blood settles on an already damaged endocardium, and the third phase of the disease is characterized by macroscopic and microscopic emboli which cause various symptoms in different organs. No treatment to date has displayed any durable efficacy, drugs, vaccines, etc. The only case of a cure on record was reported by Hemsted in the *Lancet*, Jan. 4, 1913. He combined an autovaccine with an antiserum obtained from horses immunized with the patient's own streptococci. This seems to be the only line which offers any chance of success. Debré's own experiences with it were failures, but better results may be anticipated when treatment is begun in an earlier stage.

Maternal Serotherapy in Hemophilia.—Chalier proclaims that serum from the mother's blood is the most effectual treatment known to date for congenital hemophilia. He applied it to a youth of 17 who from birth had been subject to hemophilia, and it was growing constantly worse. The mother's serum caused the son's blood to coagulate normally in the test tube, and he was given eleven intravenous injections of from 25 to 40 c.c. of the mother's serum in the course of eleven months. There was never any local or general reaction, and the young man's condition is now more favorable than at any time in his life. Chalier declares that this success encourages systematic infusion of maternal serum every tenth or fifteenth day, kept up for two years at least. In the present case the treatment was not as regular as he wished, owing to the distance from the home. The mother came to him to have the blood drawn, and the next day he took the serum to the patient for injection.

Significance of Sequence of Psychopathologic Phenomena.—Benon reports two cases in which the patients' introspection aided in the clinical and practical study of the pathologic condition, showing the succession and connection between the psychopathologic phenomena.

Schweizerische medizinische Wochenschrift, Basel

Jan. 8, 1920, **50**, No. 2

What Are Vitamins? A. Tschirch.—p. 21.
*Prognosis with Mammary Cancer. H. Iselin.—p. 22.
*Etiology of Actinomycosis. W. Odermatt.—p. 26.
*Sodium Chlorid Diuresis. S. Pollag.—p. 29.
*Auto-Urine Test for Tuberculosis. Debré and Paraf.—p. 32; Idem, Wildbolz.—p. 32.

Pathologic Anatomic Findings in Prognosis of Mammary Cancer.—Iselin reviews the literature on the ultimate fate of breast cancers classified according to their histologic structure, and discusses the conflicting presumptions as to the prognosis based on the pathologic anatomic findings. In his own experience with recent reexamination of 102 patients with mammary cancer given both operative and roentgen-ray treatment, all but 4 of the 27 patients with scirrhous cancer had died within five years, while of the 56 with simple hard cancer 33 per cent. were living after five years and more, and 10 per cent. were alive from ten to fifteen years later. Of the 13 with medullary cancer, 66 per cent. survived for from five to sixteen years. Scirrhous cancers grow slowly and cause so little disturbance that they do not reach the surgeon until far advanced, while with the other forms of cancer the interval between detection and operation was only from a few weeks to three months at longest. The small cells of the scirrhus spread in all directions almost continuously, and thus involve the regions around more readily than other cancers. In all the cases in which there was long survival, the cells had been large, but in a few of the early fatal cases the cells had also been large, so that this is not the only factor in the prognosis. The fact that so many of the irradiated—even of those with involvement of the farthest glands in the supraclavicular fossa—survived for longer intervals is impressive testimony to the value of postoperative irradiation. Even without a radical operation or roentgen-ray treatment he has had survivals up to nine years. In one case the medullary cancer was excised, but the glands were involved to such a distance that no attempt was made to clear out the supraclavicular fossa, and no roentgen exposures were made; but the woman has been in perfect health during the thirteen years since. On the other hand, he has seen cases in which as late as nine years after both excision and roentgen exposures, internal metastasis and recurrence developed.

Actinomycosis.—Odermatt has met with a number of cases of actinomycosis of the mouth which had been mistaken for a dental affection; teeth had been drawn, etc., to no avail. Sleeping on straw or hay is a frequent mode of contamination, although the lesions may not become manifest for months up to two years afterward. He describes eight cases in soldiers in which this etiology was evident; in one case the incubation had been eight months long. Schlegel found that the dry spores germinated even after 238 hours of exposure to sunlight. The neck, jaws and the cheek are the most frequent localizations of the lesions, and toothache and swelling are among the first symptoms.

Salt Diuresis.—Pollag recalls that sodium chlorid has long been known to have a powerful diuretic action, and he has been using it systematically for this purpose as a last resort in advanced nephritis. The mechanism, he explains, is like that with ingestion of a single large amount of water in oliguria. It induces such a freshet that the kidneys are flushed open and may stay open. We have no means of knowing, however, which cases will respond favorably to this and which will only be aggravated by it. The same is true of the salt treatment. It is a last resource in desperate cases, seeking to modify conditions with a substance that is not alien to the organism, and which may induce the resorption of edema from heart disease. Four cases showing striking benefit are reported; all the patients had been for some time on a salt-free diet. In one case he believes that it saved the woman's life, transforming a menacing subacute nephritis into the second stage of chronic nephritis, with good concentration and compensation. The woman had taken 15 gm. salt in one day, and the diuresis increased from 250 or 600 to 1,500 c.c., and then to more than 3,750 c.c., for a month, while the edema subsided and the weight dropped by 15 kg. Pollag adds that when no benefit has been realized by abstention from salt, giving a single large amount of salt during one day or three days during the week may jolt conditions back to approximately normal. There were never any untoward effects in his cases, such as have been observed with the "water freshet jolt" but of course such are theoretically liable to occur. No other treatment was being given at the time in his cases.

Urine Test for Tuberculosis.—Debré and Paraf criticize Wildbolz' article on this subject (summarized in these columns, Aug. 9, 1919, p. 456) and Wildbolz replies.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 6, 1919, **40**, No. 89

Pregnancy and the Statics of the Abdomen. M. Pavesi.—p. 963.

Nov. 9, 1919, **40**, No. 90

Endocrine Origin of Rhizomelic Spondylosis. G. Radice.—p. 974.

Policlinico, Rome

Dec. 21, 1919, **26**, No. 51

*Hemiplegia in Infant from Malaria. L. Spolverini.—p. 1507.
Atypical Forms of Typhoid. E. Mondolfo.—p. 1511. Conc'n.

Malarial Hemiplegia in Infant.—Spolverini comments on the rarity of malarial hemiplegia, even in adults, and reports a case in an infant in which only the blood findings gave the clue to the nature of the nervous disease. Under quinin the symptoms retrogressed in twenty-five days with merely slight limitation in the movement of one arm as the only trace left. Both parents had malaria at the time.

Riforma Medica, Naples

Nov. 8, 1919, **35**, No. 45

Gunshot Wound of Liver and Bile Ducts. D. Maragliano.—p. 970.
*Sugar Infusion. E. Zagari.—p. 972.
*Pathogenesis of Orbital Cysts. V. Cavara.—p. 978.
*Acetonuria from Fatigue. Azzo Azzi.—p. 981.
Cicatricial Stenosis of Larynx. E. Aievoli.—p. 984.

Infusion of Sugar Solution.—Zagari reproduces the ergograms and other records of a number of patients with postmalarial anemia, chlorosis or movable kidney, after subcutaneous injection of an isotonic solution of glucose. The record of the muscular exertion showed considerable increase after each injection and more after a series. There was usually a general and febrile reaction by the next day after the first injection but not after the others, and no other by-effects were noted. The output of urine increased after each injection and kept high for some days after suspension. The dose was from 500 to 700 c.c. of a solution of 47 gm. glucose with distilled water to 1,000 c.c. The improvement in energy and the diuresis that followed suggest the wisdom of substituting glucose for sodium chlorid in the so-called physiologic solutions, even when there is no special reason for dropping salt.

Orbital Cysts.—Cavara's case represents, he says, the first instance of a congenital orbitopalpebral cyst in which the entire eyeball was represented by the cyst.

Acetonuria from Fatigue.—Azzi found an average elimination of acetone bodies amounting to 0.0136 gm. in the twenty-four hours in a healthy man in the ordinary conditions of life. After becoming much fatigued, the amount increased to 0.9 and even 1.44 gm. and on repeated fatigue to 2.5 gm. The tests were made on himself during three weeks of mountain climbing. The ammonia content and the acidity of the urine varied irregularly, but the increase in the acetone output paralleled regularly the exertions inducing fatigue. The acetonuria persisted as long as the sensation of fatigue lasted, disappearing when he felt completely rested. The presence in the blood of the acetone bodies generated during the extra physical exertion is therefore probably one of the causes of the sensation of weariness.

Archivos Españoles de Pediatría, Madrid

November, 1919, **3**, No. 11

*Prophylaxis of Tuberculosis. Genaro Sisto.—p. 641.
Needed Hygienic-Sociologic Reforms. F. Criado Aguilar.—p. 651.
Dystrophy of the Teeth in Inherited Syphilis. J. González J. Meneses.—p. 662.
*Tardy Eruption in Scarlet Fever. J. Mut.—p. 666.

Prophylaxis of Tuberculosis.—This article was written for conditions in Argentina.

Tardy Eruption in Scarlet Fever.—In Mut's case all the symptoms of scarlet fever developed in the child of 4, but

not in their regular order. There was an interval of three weeks before the eruption appeared, and the typical sore throat appeared at the close of the clinical picture, the sore throat of the onset and a long gastro-intestinal phase rendering the diagnosis dubious.

Archivos Latino-Amer. de Pediatría, Buenos Aires

November-December, 1919, **13**, No. 6

*Meningeal Mask of Acute Nephritis. J. Bonaba.—p. 501.
*Infantilism. A. Carrau.—p. 505.
*Hydatid Cyst of Brain. Ponce de León.—p. 518.
*Little's Disease. R. Berro and W. Piaggio Garzón.—p. 524.
*Pericarditis in Typhoid. M. Ponce de León.—p. 530.
*Dystrophies with Inherited Syphilis. V. Zerbino.—p. 539.
*The Pneumococcus in Meningitis. J. Bonaba.—p. 546.
*Child Welfare Work in Argentina. M. Avila Méndez.—p. 550.
*Breast Milk Given Out at Milk Station. E. Gaing.—p. 569.

Meningeal Mask of Acute Nephritis.—Bonaba relates that two children were brought to the hospital on succeeding days with symptoms of meningitis, in a comatous condition. The disease had begun five days and fifteen days before, with headache, fever, and edema, and one had had convulsions the last night. The spinal fluid was normal, but the urine showed casts and other signs of nephritis. On restriction to milk both children rapidly recovered. This meningeal mask of the acute nephritis, and the coincidence of the two cases were striking features, as also the independent development of the nephritis.

Infantilism.—Carrau incriminates thyroid deficiency as responsible for the infantilism in one of the two cases he describes, and polyglandular deficiency in the other. Both of the patients, in body and mind, seem very much younger than their actual age (13 and 17). Thyroid treatment or polyglandular treatment seems the only hope in such cases.

Death After Spinal Puncture with Cerebral Cyst.—Ponce de León applied lumbar puncture to clear up a puzzling case of headache and vomiting in a boy of 11. The headaches had begun three months before, and the child preferred to lie down all the time. In the last six weeks the headache had grown worse, especially at night, and vomiting was frequent, and there was hypertonicity and also exaggeration of the reflexes. The region of the frontoparietal sutures was tender, and the legs were somewhat stiff but there was no paralysis. Lumbar puncture released 10 c.c. of normal fluid, but a few hours later the headache became intense and the child died, just twelve hours after the puncture. Morquio recently cited a very similar case in which he refrained from lumbar puncture, but the child died in this same sudden way.

Little's Disease.—The mind seems normal in the young child with congenital spastic paraplegia whose case is described by Berro and Piaggio. The child was born prematurely, and they ascribe the paraplegia to this fact, the pyramidal tracts not having had time to reach their full development.

Tuberculous Pericarditis in Typhoid.—Ponce de León witnessed the development of a primary tuberculous pericarditis which passed into a chronic phase in the girl of 10. It first appeared during convalescence from typhoid fever. The liver was also enlarged but there was no ascites, the clinical picture suggesting Hutinel's tuberculous cardiohepatic cirrhosis. Until ascites develops this may often escape detection.

Defective Development in Inherited Syphilis.—Zerbino gave specific treatment to an infant that seemed normal at birth and thrived on breast milk at first. Then it began to show digestive disturbance and lose weight. Under specific treatment it began to thrive again, even on artificial food. Even with negative Wassermann reaction, he says, the possibility of this *distrofia heredo-sifilitica* should be borne in mind whenever an infant does not seem to be thriving and yet no other cause for this can be discovered.

Meningitis with Pneumococcus Invasion.—Bonaba emphasizes the importance of disinfection of the nasopharynx in cases of meningitis, as otherwise the pneumococcus may invade the meninges as in the child described. Netter suggests adding a little antipneumococcus serum to the antimeningococcus serum. Twenty-two cases are on record in which the pneumococcus invaded the meninges in the course of meningococcus meningitis.

Child Welfare Work in Argentina.—Avila Méndez describes the organization, development and functioning of the various *institutos de puericultura* and the dispensaries for sick and for well babies.

Distribution of Bottled Breast Milk.—Gaing expatiates on the advantages of distribution of breast milk, saying that the *Instituto de Puericultura Güemez* thus distributed over 4,000 bottles of breast milk in 1917 and nearly 3,000 in 1918. This practice was begun in 1914, and long since demonstrated the transcendent importance of this supply of human milk from healthy women under medical supervision.

Prensa Médica Argentina, Buenos Aires

Dec. 20, 1919, **6**, No. 20

*Ascites with Inherited Syphilis. C. Bonorino Udaondo and J. E. Carulla.—p. 201.
*Tertiary Syphilis of the Liver. H. L. Carretti.—p. 203.
Reinfection in Inherited Syphilis; Two Cases. J. Palacio.—p. 207.
Influenza in Orphan Asylum. R. Ortega Belgrano.—p. 210.
Arrhythmias. Pablo M. Barlaro.—p. 210. Cont'n.

Ascites with Inherited Syphilis.—Bonorino and Carulla report the case of a man of 39, a hard drinker, who developed venous cirrhosis of the liver with a stormy onset and rapid ascites. There were evidences of inherited syphilis and the ascitic fluid was milky. The duodenal contents seemed to be normal, confirming further the syphilitic nature of the cirrhosis, and it promptly subsided under specific treatment, as in a second case with similar alcoholism and inherited syphilis. The alcohol had reduced the resisting powers of the liver and allowed latent syphilis to flare up and settle here. These experiences, they remark in conclusion, emphasize the importance of giving specific treatment a trial at least in all cases of cirrhosis of the liver of the atrophic type. It has often failed to relieve, but in many cases the benefit amounted to a practical cure.

Tertiary Syphilis of the Liver.—Caretti enumerates the various clinical pictures which may be induced by tertiary manifestations of syphilis in the liver. The examples he cites show that the clinical pictures with either inherited or acquired syphilis may resemble those of all the known types of liver disease and also of disease of organs in the vicinity of the liver. Tentative specific treatment should be instituted, he insists, in every case of liver disturbance in a person with or suspected of inherited or acquired syphilis, and also in every case of cancer of the liver with an unfavorable prognosis even where there is nothing to suggest syphilis. Among the personal cases reported, is one in which a supposed hydatid cyst in the liver vanished under mercury and iodid; the man of 30 had certain stigmata of inherited syphilis.

Repertorio de Medicina y Cirugía, Bogota

December, 1919, **11**, No. 3

Intraspinal Treatment of Neurosyphilis; Four Cases. F. Lleras Acosta and J. del C. Acosta V.—p. 115.
*Low Blood Pressure in Typhoid. R. Sanmartín L.—p. 148.

Low Blood Pressure in Typhoid.—Sanmartin noted unusually low blood pressure in six recent cases of typhoid. Assuming that the suprarenals were suffering from the disease, he gave a 1:1,000 solution of epinephrin to supplement their deficient functioning. The output of urine decreased during the low pressure period but returned to normal after the epinephrin was given. Five drops every three hours were given at first and then 5 or 10 drops daily to keep the pressure normal. In one very grave case, 10 drops were given four times one day by the mouth, and later 40 drops were injected subcutaneously, with a maintenance dose of 30 drops by the mouth daily, and camphorated oil was injected daily after the seventh day as the blood pressure dropped dangerously when drugs were suspended. The blood pressure in this person was normally very low, which explained the peculiarly grave situation during the typhoid. All the six patients recovered; in the one case with a six day relapse the tenth day after defervescence, no effect on the blood pressure was apparent then from the epinephrin.

Revista Médica del Uruguay, Montevideo

December, 1919, **22**, No. 12

*Radiologic Diagnosis of Appendicitis. R. Duque Estrada.—p. 827.
*Prophylactic Serotherapy for Parturients. H. García San Martín. —p. 834.
*Epidemic and Tuberculous Meningitis. L. Morquio.—p. 847.

Roentgen-Ray Diagnosis of Appendicitis.—Duque Estrada has examined with the roentgen rays over 2,200 cases in which appendicitis was suspected, and relates that the findings were instructive except in the acute cases. Here they served merely to eliminate displacement of the cecum as responsible for the disturbances. The diagnosis of appendicitis cannot be reduced to an algebraic formula that pain at McBurney's point = appendicitis. Many other factors must be taken into account, including the shape, mobility, and time of evacuation of the appendix. The roentgen picture cleared up the diagnosis in 60 per cent. of his cases.

Prophylactic Antistreptococcus Serum for Parturients.—García has been making a practice of injecting from 20 to 40 c.c. of antistreptococcus serum in every woman entering the maternity in labor. A series of 100 parturients, all in exclusively physiologic conditions, and all injected with the antiserum, are compared with 100 absolutely analogous cases but without the antiserum. He was amazed to find that the number of cases of puerperal infection was nearly twice as large (twelve) in the injected series as in the noninjected (seven). He theorizes to explain this, suggesting that the antiserum may have depressed the resisting powers, or induced changes in the depths of the tissues like the urticaria and other superficial phenomena of serum sickness. We know that the antiserum modifies the blood picture, and the reaction may change from the early high leukocytosis to actual leukopenia. Cases have been recorded in which the leukocytosis of 13,640 at first dropped to 2,530 as symptoms of serum sickness developed. The preventive antiserum may thus reduce the organic resistance and actually promote infection, allowing it to get a firm foothold.

Epidemic and Tuberculous Meningitis.—Morquio has encountered twenty-three cases of tuberculous meningitis within little more than a month in children from 6 months to 15 years old, an unprecedented number in such a short period, but all had had influenza from a few days to two or three months before. Some had seemed to be entirely healthy previously. It is not always easy to differentiate it from epidemic meningitis; it may develop suddenly and run a fulminating course, fatal in a week. On the other hand, he has had cases of epidemic meningitis which dragged along with a subacute attenuated course with exacerbations and remissions like those of tuberculous meningitis. But, with the latter, lymphocytes predominate in the limpid cerebrospinal fluid, which contains from 100 to 500 elements. With epidemic meningitis, the cerebrospinal fluid may finally assume these characteristics, spontaneously or under the influence of the antiserum. This may lead to the assumption of tuberculous meningitis unless lumbar puncture has previously demonstrated the characteristics of the epidemic form. The differential diagnosis is exceptionally important in these cases, as all depends on the prompt use of the antimeningococcus serum. In a case described, the lumbar fluid at the sixth day of the sickness was turbid and contained innumerable formed elements, polynuclears predominating. Twenty-four hours later the fluid was clear, with only 192 elements, and lymphocytes predominated. This pointed to tuberculous meningitis, but on the basis of the first findings, he injected antimeningococcus serum and the cure was prompt and complete. In another case, likewise at the sixth day, the lumbar puncture fluid was purulent, with 79 per cent. polynuclears, but the next day the fluid was clear, with 480 elements, and 95 per cent. of them were lymphocytes. The meningococcus was cultivated from the fluid and a complete cure followed a single dose of 15 c.c. of the antiserum. He comments on the rapidity of the change in the cerebrospinal fluid, and the liability of mistaking for tuberculous meningitis cases of the epidemic form with clear fluid, with or without polynuclears, and the form with lymphocytosis and rapid recovery. The onset may have been typical, but by the time the physician sees the case, the clinical picture may have become modified into an abortive, atypical form, difficult to label.

Semana Médica, Buenos Aires

Nov. 13, 1919, **26**, No. 46

*Surgery for Children. J. M. Jorge.—p. 585.
*Survival of Fetus after Loss of Pulsation in Cord. E. A. Boero.—p. 594.
Vaccine Treatment of Diphtheria. L. A. García.—p. 595.
*Sarcoma of Eyelid. Paulina Satanowsky.—p. 600.
*Mishaps with Induced Pneumothorax. A. Cetrángolo.—p. 603.
Surgery of Semilunar Cartilages. Artemio Zeno.—p. 609.
*Transient Unilateral Amaurosis. P. B. Ferro.—p. 611.

Surgery for Children.—Jorge remarks that it is distressing to hear the parents tell of the conflicting advice they have received from the different medical men they have consulted in regard to congenital defects or acquired deformities of their children. Physicians in general, he says, seem to have such vague and erroneous ideas in regard to them and they allow the deformity to progress, or exaggerate it by some mutilating operation, or merely advise taking the child to Europe or North America. His article is a plea for the founding of a chair of surgery for children and orthopedics at Buenos Aires.

Survival of Fetus when there is no Pulsation in the Cord.—Boero confirms Balard's recent statement that the blood stream may be passing through the prolapsed cord even when no pulsation is apparent in it. The fetal heart can be felt or heard beating on intra-uterine exploration or through the walls. The survival of the fetus can thus be determined, instead of taking its death for granted when the cord ceases to pulsate.

Sarcoma of Eyelid.—The melanic sarcoma had grown from the conjunctiva of the upper lid, and it was successfully removed by Cisnero's *electro-coagulo-ignicion* method, charring a circle of tissue all around the tumor and thus preventing hemorrhage. There were several papillomas on both the upper and lower lid, and all were burnt off by this same method. The sarcoma had developed to a size of 10 by 13 mm. in less than a month after it had first been discovered.

Mishaps with Induced Pneumothorax.—Cetrángolo agrees with Morelli in the assumption that instances of disagreeable by-effects with therapeutic pneumothorax are not always published. The physician should not be too timid nor overconfident in applying the procedure, relying too exclusively on the manometer. In his own extensive experience there have been several cases in which hemoptysis or subpleural and subcutaneous emphysema developed, four of secondary valve formation, and one of gas embolism. Faulty technic was responsible in this latter case; the young man had long been returning weekly for insufflation of 200 or 300 c.c. of oxygen and was doing finely, having gained 10 pounds in weight and the fever having disappeared. As Cetrángolo introduced the needle he felt the usual sensation of having traversed the pleura, but the manometer did not waver. Instead of waiting for the usual fluctuations, he began the insufflation. The patient complained at once of intense precordial pain and numbness in his arm. The needle was withdrawn, but the young man became unconscious after some convulsive movements, with complete arrest of the heart action and breathing. Under artificial respiration, injection of camphorated oil and inhalation of oxygen, he promptly revived but seemed dazed. This and facial paralysis persisted till night, and there was some vomiting. But all was normal the next day and he had no remembrance of the mishap. The lesson from it is that the gas must not be pumped in before the manometer gives the signal. If a little is allowed to enter, it should merely flow in gently. The whole storm passed over in three minutes; probably the fact that oxygen was the gas being used had a great influence on the promptness of the recovery.

The symptoms from secondary valve formation are those of progressive suffocation, an opening allowing the gas to pass, but a valve shutting off its return. Intense pain at the site of the insufflation and progressive dyspnea half an hour to two hours afterward compelled puncture to release the

gas, unless relief was obtained by a spontaneous subcutaneous emphysema. The pressure had increased from 0 to 20 in one of these cases, and the heart was much hampered. The symptoms kept recurring through three days in this case. In all of this group of four the pulmonary lesions were grave and of long standing; the traction on fibrous bands evidently tore out a piece from the parenchyma of the lung during coughing. Hemoptysis was due to pricking a blood vessel, or to activation of the focus in the other lung from traction by bands, or to inadequate compression. In one case described, severe hemoptysis followed insufflation of small amounts of gas, 300 or 500 c.c., but it ceased when the amount was increased, and marked improvement followed.

The Curtain Visual Phenomenon.—Ferro asks for the explanation of the phenomenon he describes which he has encountered in three men of about 50, two of them physicians and all apparently healthy, with normal urine and fundus findings. Once in a while vision seems to be gradually shut off in one eye, and then it gradually returns, the sensation resembling the lowering of the asbestos curtain in a theater.

Deutsche medizinische Wochenschrift, Berlin

Nov. 13, 1919, **45**, No. 46

*The Origin of Tumors. H. Ribbert.—p. 1265.
*Trauma in Relation to Arteriosclerosis. E. Fraenkel.—p. 1268.
*Tuberculosis in Cold-Blooded Animals. F. Klopstock.—p. 1269.
Dinitrobenzene Poisoning. A. H. Hübner.—p. 1272.
*The Sachs-Georgi and the Meinicke Reactions. K. Merzweiler.—p. 1273.
The Rumpel-Leede Scarlet Fever Phenomenon. H. Müller, Jr.—p. 1275.
*Persistent Salvarsan Exanthems. Dora Fuchs.—p. 1276.
*Remarkable Case of Apparent Death. E. Rautenberg.—p. 1277.

The Origin of Tumors.—Ribbert regards the hereditary factors of all diseases as qualities common to mankind in general, and believes that they are transmitted from one generation to another in the same manner as normal qualities. We must not imagine, he says, that mankind was originally perfectly healthy, but rather assume that from the beginning man was more or less affected by countless anomalies, which, with certain interruptions or skips, manifest themselves in successive generations. We can establish the conditions under which tumors occur, which is as far as we can go with any so-called explanations in the realm of science. A tumor cannot be produced experimentally unless the predisposition thereto exists beforehand, and only so far as such predisposition exists, is it possible for any exciting cause to act on germ cells in such a manner as to cause a tumor to develop. If cancer is hereditary in certain cases, which, in the face of accumulated evidence, can scarcely be denied, it is probably hereditary in all cases. Cancer resulting from industrial contact with pitch, paraffin and arsenic indicates that an external agent sometimes plays a secondary rôle in the development of cancer. This type of cancer suggests also that carcinogenetic deviations from the normal structure of various epitheliums are much more widespread than is commonly supposed, and that by far the majority of the anomalous predisposing germ cells remain quiescent and never develop into cancer. Ordinarily, however, tumors develop "spontaneously" without exciting cause, that is, owing solely to the presence of anomalous predisposing germ cells.

Trauma in Relation to Arteriosclerosis.—While Fraenkel admits that there is no connection between general arteriosclerosis and previous trauma, and still holds fast to the view that sclerosis of the cranial arteries following head trauma is absolutely unproved, he does believe that the case he reports in detail furnishes strong evidence for the assumption that localized sclerosis of the abdominal aorta following trauma does occur. Fraenkel's patient, aged 29, was paralyzed from a gunshot wound of the spine. A year and a half afterward, necropsy revealed changes in the lower segment of the abdominal aorta, which he describes, and which experts declared to be typical arteriosclerosis, but the process was localized exclusively in the region which might easily have been affected by the trauma from the shell wound, a scrap of shell having been found in the lower dorsal cord.

Tuberculosis in Cold-Blooded Animals.—An extensive series of investigations leads Klopstock to the conviction that the tubercle bacillus of man and warm-blooded animals may change into the type found in cold-blooded animals.

The Sachs-Georgi and the Meinicke Reactions.—After examining over 700 serums by the Sachs-Georgi and 366 by the Meinicke method, Merzweiler reaches the conclusion that the Meinicke reaction in its present form cannot be considered an adequate substitute for the Wassermann test. The Meinicke reaction gives a larger percentage of unspecific positive results than the Wassermann reaction. However, Merzweiler found that the Sachs-Georgi reaction, as used in large laboratories where two or three series of tests with fresh extracts are made each week, may be regarded as a complete substitute for the Wassermann reaction. A weak point in the Sachs-Georgi reaction is that it is not reliable when applied to extracts five days old.

Persistent Localized Salvarsan Exanthems.—Fuchs reports the case of a patient who in 1915 was admitted to treatment with a beginning paralysis. Immediately after every neosalvarsan injection (0.45-0.6 gm.) a reddening of the bulbar and palpebral conjunctiva and lacrimation occurred, always in the right eye, disappearing in a few hours. In 1916 the patient was treated with 0.45 and 0.3 gm. of sodium salvarsan, respectively, without any conjunctival reaction. In 1917 there was no unfavorable reaction following repeated sodium salvarsan injections. After 0.45 gm. of neosalvarsan, however, the same conjunctival reaction occurred as in 1915. February 20, 1917, three minutes before the injection of 0.45 gm. of neosalvarsan, 0.5 c.c. of a 1:1,000 epinephrin solution was administered. The reaction of the conjunctiva appeared less promptly and less intensively, and passed off sooner. The patient was then given daily from 1 to 3 gm. of hexamethylenamin and no reaction occurred. February 25, with the same dose of neosalvarsan, the same observations were made as on February 20. September 2, before the injection of 0.45 gm. of neosalvarsan, 1 c.c. of a 1:1,000 epinephrin solution was administered. A very slight irritation of the conjunctiva followed. September 19, after the usual 0.45 gm. dose of neosalvarsan, given four minutes after the injection of 0.5 c.c. of a 1:1,000 epinephrin solution, there was no reaction, confirming the prophylactic importance of epinephrin in warding off side effects from arsphenamin treatment.

A Remarkable Case of Apparent Death.—Rautenberg reports the case of a nurse, aged 23, who, Oct. 27, 1919, took in one dose 1.7 gm. of morphin and 5 gm. of barbital. When found in the park next day, life was almost extinct. She was thought to have died in the ambulance. The indications of death were: rigidity; intense pallor; absence of reflexes, pulse, respiration and heart beat. Hot sealing wax gave no skin reaction. After fourteen hours in the morgue, an official desiring to identify the body, October 29, the coffin was opened. The cheeks had a purplish tinge, and the larynx moved slightly. There were no respiratory movements nor pulse beat, but muffled heart sounds were audible. At 10 a. m. the patient was taken to the hospital. Camphor and caffein were given subcutaneously and stomach lavage was done. A hot bath was given and a flesh brush was applied vigorously, with artificial respiration and oxygen inhalation. At 11 a. m. the pulse could be felt, and short, jerky inspiration was noted. Rigidity of the limbs abated. At 12 the pulse was above 50. October 30, the patient regained consciousness and made a few statements. There were no signs of pneumonia, but persistent leukopenia was present. How is it possible for a human being to live more than twenty-four hours without respiration and blood circulation? Rautenberg explains the strange condition as due to the effect of the narcotic and the cold which, acting together, brought about a paralysis of the vasomotor nerves and thus reduced the needs of the body to a minimum, the narcotic paralyzing the central nervous system, and the cold effecting the rigid paralysis of the organs. He thinks the cold may have prevented rapid resorption of the alkaloid.

The condition was similar to that of hibernation of animals, and this fact tided the organism past the danger of pneumonia.

Deutsche Zeitschrift für Chirurgie, Leipzig

May, 1919, **149**, No. 5-6

*The Loose Bodies with Arthritis Deformans. Lucia Hahn.—p. 289.
*Treatment of Pseudarthrosis. H. E. Brunzel.—p. 394.
*Incarcerated Pectineal Hernia. W. Lehmann.—p. 409.
*Spastic Ileus. H. F. Brunzel.—p. 414.
*Salivary Fistula. H. Weitz.—p. 419.

Loose Bodies in Joints.—Hahn analyzes the findings in knee or elbow in eight cases of deforming arthritis and in a number of other joint cases. Her findings confirm the two modes of origin of the loose bodies with deforming arthritis, from a nucleus of cartilage, or of spongy bone tissue. She states that they were always multiple, while the traumatic loose bodies are single.

Treatment of Pseudarthrosis.—Brunzel regards direct injection of tincture of iodin as the most effectual means to induce fibrinous inflammation, and thus accelerate the healing of pseudarthrosis. In his experience with it he injected up to 20 c.c. of the 5 per cent. tincture of iodin (diluted with an equal amount of 96 per cent. alcohol), distributing the fluid throughout the area, depositing some under the periosteum at each end of the pseudarthrosis. In stimulating the healing of fractures and pseudarthrosis which are tardy in consolidating, he has found obstructive hyperemia very useful, but he restricts it exclusively to the site of the fracture. He accomplishes this by applying a close fitting plaster cast with a window over the lesion. The tissues swell up in this window and a localized passive hyperemia results, which he thinks aided materially in hastening the healing. This passive hyperemia is under constant control, the "window tumor" increasing or subsiding as the leg is used, or is raised. This alternation of passive and active hyperemia through the region seemed to be an important factor in the prompt healing in the four cases described. The method did not display the same efficacy when applied to the arms, or to gonorrheal arthritis. The successes were with simple fracture or pseudarthrosis in the legs.

Pectineal Crural Hernia.—Lehmann adds another to the comparatively few cases on record of successful operation for an incarcerated Cloquet hernia.

Laparotomy for Spastic Ileus.—Brunzel's patient was a nurse of 30, of a nervous and hysteric temperament, with repeatedly recurring attacks of ileus, one finally so severe that the abdomen was opened. Nothing pathologic was found, but she supposed that a strangulated loop had been corrected, and she has been free from all disturbances during the five months since the laparotomy to date.

Treatment of Parotid Fistulas.—Weitz reports a case in which he applied Leriche's method of treating chronic salivary fistulas, by resecting the auriculotemporal nerve which presides over the secretion of saliva. In Weitz' case the fistula had persisted for twenty years. The secretion from the fistula stopped at once, and the fistula soon healed.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 6, 1919, **2**, No. 23

The Language of Medical Writings. VI. A Kluyver.—p. 1857.
*Reform in Medical Teaching. IV. G. van Rijnberk.—p. 1861.
Phenylethylbarbituric Acid in Therapeutics. S. Koster.—p. 1866.
*The Attendants on Contagious Diseases. M. Niemeijer.—p. 1873.
*Fatal Familial Icterus Neonatorum. G. A. Prins.—p. 1880.

Reforms in Medical Teaching.—Van Rijnberk declares that the medical curriculum was planned at a time when the general practitioner was supposed to know something of every branch of medicine, and be prepared to treat everything that turned up. He insists that this is an anachronism now, and he urges that everything should be dropped from the regular medical course except what is basic to all medicine and to all specialties. This would materially lighten the medical course by eliminating everything suggesting any of the individual specialties. The first ten semesters would be the same for all; then the course would branch. The eleventh semester given mainly to obstetrics would entitle to the degree of general practitioner. Addition of a twelfth, given to gynecology, to the degree of specialist in gynecology. The eleventh and twelfth semesters devoted to roentgenology would give the degree of radiologist. At present, he says, many of those wielding the dangerous rays are like children playing with fire. Other specialties would require the eleventh and twelfth semesters in special studies. He adds that although this plan he knows is a *utopie-fantasie*, yet it has a number of vital advantages, not the least of which is that the patient would be handed over to the specialist at once, the practitioner not only knowing his incompetency but being restrained by law from experimenting in the specialty without the special diploma.

Prophylaxis of Contagious Diseases.—Niemeijer discusses whether it is safe to allow nurses and other attendants in contagious disease isolation hospitals to go to church or mix with people elsewhere during the daily hours off duty. The nurse is in such intimate contact with the patient that the danger of becoming a carrier is much more acute than in the case of any other person, and he is inclined to agree with those who think that with scarlet fever, at least, the nurse should be isolated the same as the patient. A committee of five physicians appointed in his town by the national public health authorities took the opposite view, allowing the nurses to come and go provided extremely strict measures to prevent infection are observed in regard to changing clothing, etc. The committee advise further that a special place in the church should be set apart for them. The only exceptions specified by the committee are smallpox and bubonic plague. In conclusion he cites from a German textbook to the effect that there is no evidence that scarlet fever occurs any more frequently in physicians' families than in the general population.

Familial Icterus Neonatorum.—Prins thinks that nothing but a familial constitutional inferiority of the liver parenchyma will explain the cases related. The woman's first two children were normal but then she met with an accident, falling on her back, and since then the children born were normal at first but by the third day intense jaundice developed. One threw it off in a few days, but a following pair of twins developed the jaundice the third day and both died. The last child also developed the icterus the third day although it seemed otherwise normal in every respect, and it died two days later. The only pathologic finding at the necropsy was an extremely thick and tenacious bile, with bile thrombi in the biliary capillaries, and evidences of phagocytosis in the spleen.

Ugeskrift for Læger, Copenhagen

Jan. 29, 1920, **82**, No. 5

*The Lesions in a Railroad Accident. J. Fog.—p. 145.

The Injured in a Railroad Accident.—Fog describes the case-histories of forty-five persons injured in an accident, including 4 persons in whom the mind alone was affected; the others required surgical measures. There were 26 with fractures, and 78 fractured bones in the 40 that were killed at once. All the injured complained of intense thirst and cold, but they said they did not feel pain from their injuries. The screaming was from the fright. Meisen compares the lesions and traumatic neuroses with those of the war, saying that the mental condition was exactly like that of shell shock, and also the physical shock seemed to be the same, as evidenced by the pallor, chilliness, imperceptible pulse and mental confusion. The latent period before the mental phenomena developed was also like that observed in the war wounded or shell shocked. He emphasizes the necessity for distinguishing between shock conditions and those from internal hemorrhage.

Upsala Läkareförenings Förhandlingar

Jan. 10, 1920, **25**, No. 1-2

Illumination of Tumor in Choroid. C. Lindahl.—p. 1.
The Separation of the Senses. H. Ohrvall.—p. 21.
The Proteolytic Enzyme of Fibrin J. Möllerström.—p. 55.
Normal and Pathologic Depression and Depression-Psychoses. H. Sjöbring.—p. 73.

THE NEW ORLEANS SESSION

AMERICAN MEDICAL ASSOCIATION, SEVENTY-FIRST ANNUAL SESSION
NEW ORLEANS, APRIL 26-30, 1920

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The seventy-first annual session of the American Medical Association will be held in New Orleans, La., April 26-30, 1920.

The House of Delegates will convene at 10 a. m., Monday, April 26. In the House the representation of the various constituent associations for 1920 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	3	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	6
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	2	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	8	South Carolina	1
Indiana	3	South Dakota	1
Iowa	3	Tennessee	2
Kansas	3	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	1	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 8:30 p. m., Tuesday, April 27. The Sections will meet on Wednesday, Thursday and Friday, April 28, 29 and 30, as follows:

CONVENING AT 9 A. M. THE SECTIONS ON

Surgery, General and Abdominal
Ophthalmology
Diseases of Children
Nervous and Mental Diseases
Pharmacology and Therapeutics
Preventive Medicine and Public Health
Urology.

CONVENING AT 2 P. M. THE SECTIONS ON

Practice of Medicine
Obstetrics, Gynecology and Abdominal Surgery
Laryngology, Otology and Rhinology
Pathology and Physiology
Stomatology
Dermatology
Orthopedic Surgery
Gastro-Enterology and Proctology.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, April 26, 27, 28 and 29, and from 8:30 a. m. to 12 noon, on Friday, April 30.

ALEXANDER LAMBERT, President.
HUBERT WORK, Speaker, House of Delegates.
ALEXANDER R. CRAIG, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA
S. G. Gay, Selma.
F. W. Wilkerson, Montgomery.

ARKANSAS
R. C. Dorr, Batesville.
William R. Bathurst, Little Rock.

CALIFORNIA
A. B. Spaulding, San Francisco.
C. Van Zwalenburg, Riverside.
Victor Vecki, San Francisco.

COLORADO
J. N. Hall, Denver.

CONNECTICUT
John E. Lane, New Haven.
Walter R. Steiner, Hartford.

DELAWARE
P. W. Tomlinson, Wilmington.

DISTRICT OF COLUMBIA
William Gerry Morgan, Washington.

FLORIDA
John S. Helms, Tampa.

GEORGIA
S. R. Roberts, Atlanta.
H. H. Martin, Savannah.

ILLINOIS
R. J. Coultras, Mattoon.
T. D. Doan, Scottville.
E. B. Coolley, Danville.
C. E. Humiston, Chicago.
L. Hektoen, Chicago.
C. W. Leigh, Chicago
J. H. Rice, Quincy.
M. L. Harris, Chicago.

INDIANA
Joseph R. Eastman, Indianapolis.
George W. Spohn, Elkhart.
Albert E. Bulson, Jr., Fort Wayne.

IOWA
John C. Rockafellow, Des Moines.
M. N. Voldeng, Woodward.
Wm. B. Small, Waterloo.

KANSAS
Charles S. Huffman, Topeka.
W. S. Lindsay, Topeka.
R. J. Morton, Green.

KENTUCKY
L. S. McMurtry, Louisville.

LOUISIANA
W. H. Seemann, New Orleans.
Clarence Pierson, Jackson.

MAINE
Bertram L. Bryant, Bangor.

MARYLAND
Thomas S. Cullen, Baltimore.
Randolph Winslow, Baltimore.

MASSACHUSETTS
J. B. Blake, Boston.
H. G. Stetson, Greenfield.
L. F. Woodward, Worcester.
F. B. Lund, Boston.
E. F. Cody, New Bedford.

MICHIGAN
A. W. Hornbogen, Marquette.
F. C. Warnshuis, Grand Rapids.
Guy Connor, Detroit.
J. D. Brook, Grandville.

MINNESOTA
W. H. Magie, Duluth.
J. W. Bell, Minneapolis.

MISSISSIPPI
Willis Walley, Jackson.

MISSOURI
W. J. Ferguson, Sedalia.
A. R. McComas, Sturgeon.
Franklin E. Murphy, Kansas City.
R. M. Funkhouser, St. Louis.

MONTANA
E. W. Spotswood, Missoula.

NEBRASKA
Joseph M. Aikin, Omaha.
LeRoy Crummer, Omaha.

NEVADA
M. A. Robison, Reno.

NEW HAMPSHIRE
D. E. Sullivan, Concord.

NEW JERSEY
Frank J. Keller, Paterson.
George E. Reading, Woodbury.

NEW MEXICO
W. T. Joyner, Roswell.

NEW YORK
James W. Fleming, Brooklyn.
Dwight H. Murray, Syracuse.
Frederic E. Sondern, New York.
George W. Kosmak, New York.
Arthur J. Bedell, Albany.
James F. Rooney, Albany.
Thomas H. Halsted, Syracuse.
George D. Stewart, New York.
William F. Campbell, Brooklyn.
E. Eliot Harris, New York.

NORTH CAROLINA
H. A. Royster, Raleigh.
C. P. Ambler, Asheville.

NORTH DAKOTA
E. A. Pray, Valley City.

OHIO
J. H. J. Upham, Columbus.
Ben R. McClellan, Xenia.
C. D. Selby, Toledo.
Rufus B. Hall, Cincinnati.
George E. Follansbee, Cleveand.
Granville Warburton, Zanesville.

OKLAHOMA
LeRoy Long, Oklahoma City.
L. S. Willour, McAlester.

OREGON
W. T. Williamson, Portland.

PENNSYLVANIA
Edw. B. Heckel, Pittsburgh.
John D. McLean, Philadelphia.
David N. Dennis, Erie.
John M. Baldy, Philadelphia.
William F. Bacon, York.
George R. S. Corson, Pottsville.
Herbert B. Gibby, Wilkes-Barre.
George G. Harman, Huntingdon.
Wilmer Krusen, Philadelphia.

PORTO RICO
Jocinto Aviles, San Juan.

SOUTH CAROLINA
Edgar A. Hines, Seneca.

SOUTH DAKOTA
H. J. G. Koobs, Scotland.

TENNESSEE
E. T. Newell, Chattanooga.
L. A. Yarborough, Covington.

TEXAS
I. C. Chase, Fort Worth.
M. L. Graves, Galveston.
W. B. Russ, San Antonio.
W. W. Ralston, Houston.

UTAH
Joseph R. Morrell, Ogden.

WASHINGTON
D. E. McGillivray, Pt. Angeles.
S. E. Lambert, Spokane.

WEST VIRGINIA
Chester R. Ogden, Clarksburg.

WISCONSIN
Horace M. Brown, Milwaukee.
Rock Sleyster, Wauwatosa.
Charles H. Lemon, Milwaukee.

WYOMING
Earl Whedon, Sheridan.

DELEGATES FROM THE UNITED STATES GOVERNMENT SERVICE

United States Army, F. F. Russell.
United States Navy, Frank E. McCullough.
United States Public Health Service.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
Roger S. Morrison, Cincinnati.

SURGERY, GENERAL AND ABDOMINAL
Raymond P. Sullivan, Brooklyn.

OBSTERICS, GYNECOLOGY AND ABDOMINAL SURGERY
Lewis S. McMurtry, Louisville. Ky.

OPHTHALMOLOGY
Lee Masten Francis, Buffalo.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
John F. Barnhill, Indianapolis.

DISEASES OF CHILDREN
Isaac A. Abt, Chicago.

PHARMACOLOGY AND THERAPEUTICS
W. A. Bastedo, New York.

PATHOLOGY AND PHYSIOLOGY
E. R. LeCount, Chicago.

STOMATOLOGY
William C. Fisher, New York.

NERVOUS AND MENTAL DISEASES
Hugh T. Patrick, Chicago.

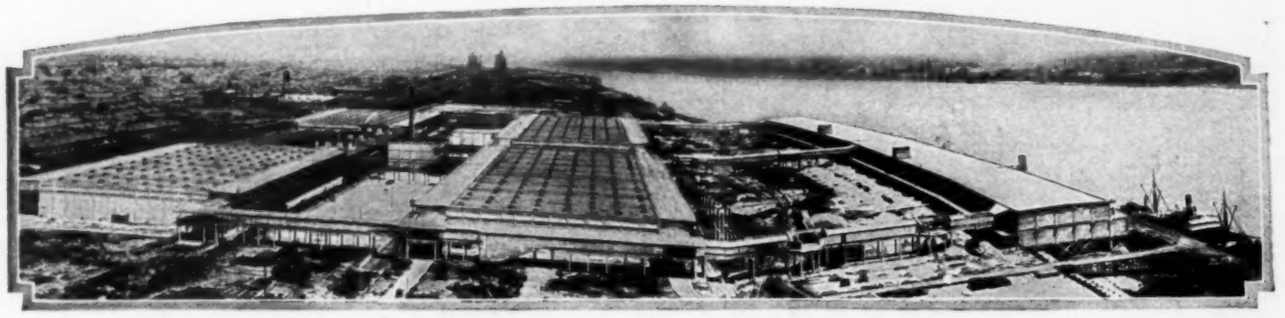
DERMATOLOGY
George M. MacKee, New York.

PREVENTIVE MEDICINE AND PUBLIC HEALTH
C. St. Clair Drake, Springfield, Ill.

UROLOGY
Edward L. Keyes, Jr., New York.

GASTRO-ENTEROLOGY AND PROCTOLOGY
Alois B. Graham, Indianapolis.

ORTHOPEDIC SURGERY
John Ridlon, Chicago.



THE WHARVES AT NEW ORLEANS

NEW ORLEANS—THE CRESCENT CITY

When the American Medical Association met in New Orleans in 1903, the city was just beginning to feel the good effects of that portion of its new drainage system which began operation in 1900. Today, with this system completed, it is one of the most healthful and attractive cities in the United States. The location, both climatically and commercially, is ideal. The winters are not severe, and while the summers are rather long, the temperature does not reach the excessive heights experienced in summer elsewhere. Sun strokes and heat prostrations are practically unknown. The foliage is such as to indicate that the climate is both temperate and tropical. An analysis of the temperature for the month of April during the last five years indicates a most equable climate:

HIGH, LOW AND MEAN TEMPERATURES, APRIL 20-30, FOR LAST FIVE YEARS

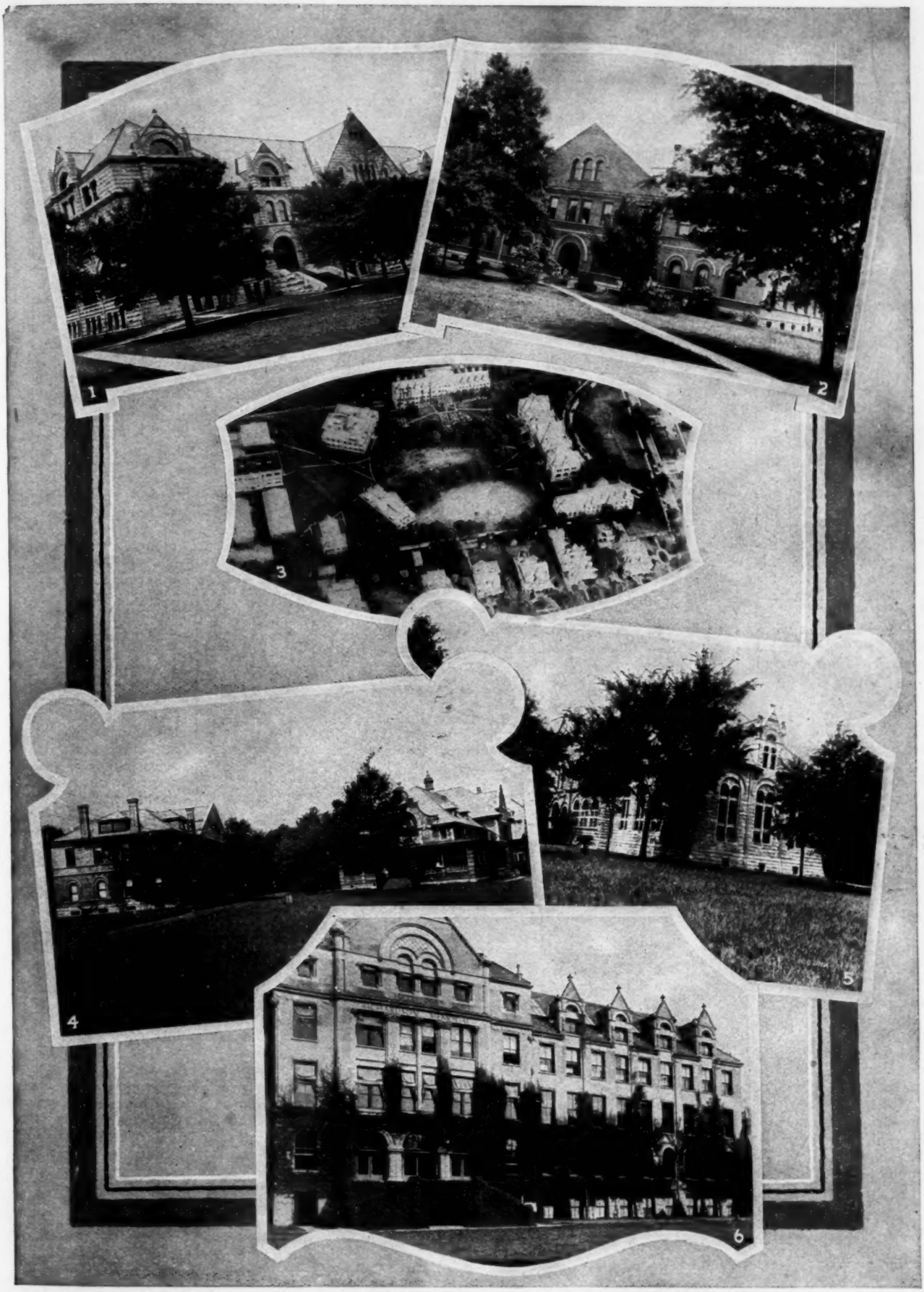
April	1915			1916			1917			1918			1919		
20	80	62	71	80	72	76	79	65	72	65	57	61	75	59	67
21	82	65	74	79	65	72	74	64	68	64	50	57	79	63	71
22	83	69	76	82	63	72	76	60	68	73	56	64	83	64	74
23	79	66	72	84	64	74	82	63	72	80	56	68	84	65	74
24	78	66	72	81	67	74	84	60	72	72	61	66	85	63	74
25	82	65	74	79	67	73	83	64	74	79	63	71	86	68	77
26	82	64	73	78	62	70	84	65	74	84	65	74	71	60	66
27	82	64	73	69	60	64	82	66	74	85	66	76	78	61	70
28	86	65	76	70	58	64	83	68	76	82	64	73	83	66	74
29	90	66	78	75	58	66	86	69	78	81	66	74	75	70	72
30	89	70	80	79	58	68	85	69	77	76	65	70	71	63	67

COMMERCE AND MUNICIPAL OWNERSHIP

Municipal ownership has probably been developed to a higher extent here than in any other city in the United States. Among the municipally owned enterprises are the wharves, covered with steel sheds, Public Belt Railroad, public cotton warehouses, public grain elevators, waterworks, sewerage and drainage, and, in the course of construction, an inner harbor for the location of factories and shipbuilding plants. An enormous amount of money has been expended to make the city secure from inundation from both the river and from Lake Pontchartrain. Rat-proofing has practically been completed at a great expense, and the city has been placed in such physical condition that it will be impossible for any imported pestilence ever again to secure a foothold. Natural gas, which has been found in abundance within less than a hundred miles of New Orleans, will soon be introduced. Since the last meeting of the Association here, the natural resources of Louisiana have come into their own, and have proved to be of such a nature as to make Louisiana one of the richest mineral producing states in the country, particularly for salt, sulphur, oil and gas. Naturally, the timber interests of the state have increased along with other classes, and wonderful fishing and game resources have been developed. The state has been wise in having all of its natural resources under the control of what has proved to be an efficient conservation commission. Available to the visitor are the finest oysters in the world, to be had at any oyster stand or restaurant in the city, and to be eaten with absolute impunity.

SCHOOLS AND UNIVERSITIES

The two principal universities are Tulane and Loyola. Loyola has recently expanded its curriculum extensively, so that, in addition to the ordinary academic courses, it gives courses in some of the special sciences, and has recently established a graduate school of medicine; also certain research laboratories are under way.



TULANE UNIVERSITY BUILDINGS

1. Academic Department, Gibson Hall. 2. Richardson Chemistry Building. 3. Aerial View, Tulane Buildings and Campus.
4. Refectory and Physics Buildings. 5. Tilton Memorial Library. 6. Medical Department, Tulane Campus.

New Orleans has one of the best public school systems in the country, with a great many modern school buildings, both for white and for colored pupils.

TULANE UNIVERSITY

Tulane University of Louisiana during the last fifteen years has developed from a group of loosely coordinated colleges, with varying standards of admission and graduation, into a highly organized university of the first rank. Within this period the attendance has increased from 1,191 in the session of 1904-1905 to 2,500 in the session of 1919-1920; and if we add the summer school, which was begun in 1908, the attendance in 1919 will be 3,762.

Tulane University of Louisiana comprehends the college of Arts and Sciences, the College of Technology, the H. Sophie Newcomb Memorial College for Young Women, the Faculty of Graduate Studies, the College of Law, the College of Medicine, the College of Commerce and Business Administration, and the Summer School. The College of Medicine includes the Schools of Medicine, Pharmacy, Dentistry, and the Graduate School of Medicine (Polyclinic). The College of Technology includes the Schools of Mechanical and Electrical Engineering, Civil Engineering, Chemical Engineering, and Architecture. The H. Sophie Newcomb Memorial College includes, in addition to the usual college course, the Schools of Arts, Music and Household Economy.

During this period the increase in endowment has included only one considerable bequest, for the Newcomb College for Women. There have been within the same period eight buildings erected for educational purposes.

In the past ten years the College of Arts and Sciences has increased its attendance from 96 to 234; Technology, from 164 to 220; Newcomb, from 278 to 537; Law, from 59 to 90; Commerce, from 0 to 681. The School of Medicine, after many variations in attendance due to the raising of standards and fees, and to the effect of the war, has increased its attendance from 355 in 1918-1919 to 416 in 1919-1920.

The College of Technology was organized in 1894. To June, 1919, there have been 440 graduates in technology. Of these, 124 became engineer officers in the late war (2 colonels; 3 lieutenant-colonels; 4 majors; 24 captains and 91 first and second lieutenants and ensigns).

The School of Medicine was established in 1834. To June, 1919, there have been 4,936 graduates. Of these, 578 were in military service in the late war (3 colonels; 11 lieutenant-colonels; 42 majors; 104 captains, and 418 first lieutenants). This school has solved problems in malaria, leprosy, hookworm, pellagra and beriberi, and cooperated in the investigation and eradication of yellow fever. Its students have been coordinated with the Louisiana State Board of Health in training for public health work.

The Tulane Hospital unit was the first base hospital fully organized in the South (mobilized, September, 1917).

During the war session from June 1, 1918, to June 1, 1919, Tulane trained 7,145 students, of whom nearly 5,000 were trained directly for war service.

HOSPITALS

The city has been noted for its true charity, and the most noteworthy of its charities has been the care of the sick. The Charity Hospital, in the course of its fifty years' existence, has treated gratis, as bed patients, many times more than the present population of 435,000, including many patients from other states than Louisiana. The principal hospitals in the city are, first, naturally the Charity Hospital; then Touro Infirmary, which recently received $600,000 to be expended in securing added facilities and space, both for their private and free clinic work; the Hotel Dieu; Eye, Ear, Nose and Throat Hospital; the Presbyterian Hospital; the French Hospital; the Illinois Central; Belvedere; the Flint-Goodridge (colored) and Providence (colored), besides a number of private sanatoriums; the City Hospital for Mental Diseases; the Isolation Hospital, and the Louisiana Retreat. Nearly all of these institutions are available for teaching purposes.

THE OLD FRENCH QUARTER

Naturally, with the increase of land values, many of the old buildings have had to give way to improvements. Still, the old French quarter, with its narrow streets and overhanging balconies ornamented with wonderful iron work, retains most of its charm and quaintness, and is a source of great interest and pleasure to the stranger. While ample provision will be made for trips to the various publicly owned institutions and river trips for viewing the harbor, and while guides will be provided for visitors to the French quarter, the casual visitor may be interested to know that he may, for himself, approximately judge of the age of the buildings he is looking at by the character of the iron work of the balconies. The beautiful wrought iron work denotes that the building is colonial; the cast iron work that the building was constructed some time between colonial days and the outbreak of the Civil War, and all other ornamentation on the building indicates that it was erected after the close of the Civil War. The Civil War fixes the date for the cessation in the use of iron work for ornamental purposes, as all of the foundries at that time devoted their attention to the manufacture of munitions, and, after the war devoted their energies to the manufacture of sugar mills and other implements needed for the material prosperity of the state.

JACKSON SQUARE, THE CABILDO AND CATHEDRAL

WATER SUPPLY

Prior to 1900, the soil of the city was saturated, always practically to the surface; and prior to 1908 there were no sewers. Vaults and cesspools existed on all premises, and the main reliance for a water supply was on rain water caught from the roof of the houses and stored in wooden cisterns, built on foundations well above ground level. There was a water works system, but not one twelfth of the premises of the city used it at all, and not half of the streets had water mains. Through these mains the natural Mississippi River water (and mud) was available to those who wanted it, but it had to be filtered for almost any use, and hardly constituted a water supply at all.

BEGINNING OF SANITATION

In 1895, the city of New Orleans really started the inauguration of her sanitary improvements by the development of general plans for an effective drainage system. Construction was started in 1897, and was sufficiently advanced by 1900 to begin operation. This at once entirely changed the conditions existing in the well built areas of the city.

THE OLD FRENCH QUARTERS

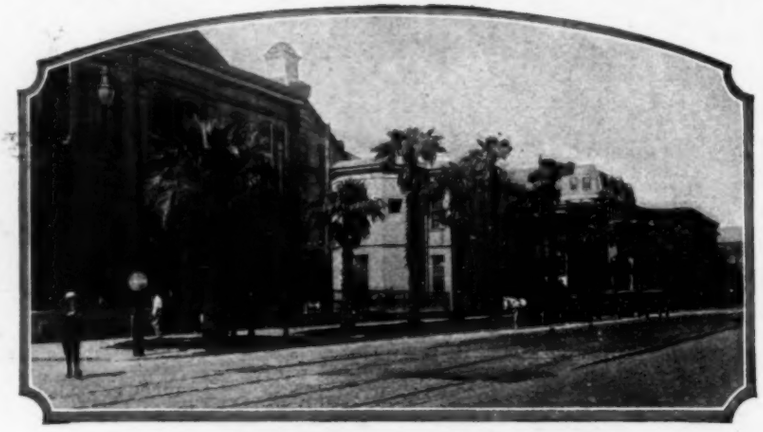
1 and 2. Old French Court Yards. 3. Dumaine Street, Old French Quarter. 4. Absinthe House. 5. Famous Old French Market.

In 1899, the sewerage and water board law was enacted and a tax and plan started for the development of these improvements also, and for the further development of the drainage system. The fund for these uses is a common fund, and the three systems are under a common management. On account of limitation of funds, and the times when they became available, it has been necessary to bring the three systems to their present stage of development gradually.

By 1909, the sewerage and water systems were fully ready to receive connections over the whole built-up area of the city. Since 1909, the drainage system has been greatly enlarged and extended, and the sewerage and water systems have been constantly extended. They have gradually been fully utilized by all of the people, without any legal steps to compel such use, except in the matter of the abolition of a few of the many original roof water cisterns which certain of the citizens wanted to retain for one purpose or another, but which the city desired to eliminate because of the difficulty of preventing the breeding in them of stegomyia mosquitoes, which in the possible event of the importation of a yellow fever case would favor the spread of this disease.

To this time, about $32,000,000 has been expended on the construction of the sewerage, water and main drainage system, including the cost of water meters, which are furnished on every water connection, and the cost of water and sewerage connections from the mains to the property line. The systems today could not be duplicated for $50,000,000 and only $20,000,000 of 4 per cent. bonded indebtedness exists against them.

At present about 600 miles of streets are served with water and sewerage facilities and effective fire protection through fire hydrants at each street intersection, and about 93 per cent. of the premises of the city are connected with the sewers and 96 per cent. with the water works system.



THE CHARITY HOSPITAL

SEWERAGE AND DRAINAGE

New Orleans lies between the Mississippi River and Lake Pontchartrain, which is a slightly brackish tidal lake. One third of the city has its surface elevation at or below mean tide level in the lake, another third has its surface elevation at or below high lake tides in Lake Pontchartrain, and since "tides" in Lake Pontchartrain are the product of prevailing winds acting on the Gulf of Mexico and may be high or low a week at a time and have a range of nearly 7 feet, it is obvious that anything at or below tide level in the lake, depending on a gravity outlet for drainage into the lake, would itself be just a part of the lake. The remaining third of the city is that portion along the bank of the Mississippi River which at various points is naturally from 2 to 8 feet above high tide level in Lake Pontchartrain, and, roughly speaking, from 13 to 7 feet below high water in the Mississippi River. The city, therefore, is protected by substantial earthen embankments, or levees, against inundation both from the lake behind it and from the river in front of it, and is under the necessity of pumping all of its storm water drainage which it discharges into the tidal waters to the rear or to the eastward, because this is the only practical method of getting rid of the vast volume of storm water which semitropical rains frequently furnish.

The sewage also has to be pumped, and because it would tend rapidly to create a nuisance, if discharged into our shallow tidal lakes, it is discharged against a greater lift, through cast iron force mains, into the Mississippi River, entering the river well under the low water surface, in a direct downstream current at three points along the lower city river front. Sewage so discharged is at once disposed in the vast volume of muddy river water, and does not even appear at the surface.

In order to obtain effective drainage with rainfalls sometimes as much as 3½ inches in an hour, 7 inches in five hours, or 9 inches in twelve hours, over an area of 30,000 acres, there are six major drainage pumping stations having capacities ranging from 1,700 cubic feet to 3,000 cubic feet a second, with individual pumping units up to 700 cubic feet a second for storm duty, and down to 40 cubic feet a second or less for constant duty pumping. The aggregate capacity of these storm drainage pumps is about 7,000,000,000 gallons a day. Some of the drainage is lifted four times, and most of it at least twice, before it is finally delivered into the tide level leveed outfall canals, the aggregate lift probably averaging about 18 feet. These drainage pumps are operated electrically from two power stations, owned by the sewerage and water board, which have a maximum capacity of about 12,000 horse power. These drainage pumps constitute the greatest and most economical aggregation of low lift pumping machinery that exists. Seven billion gallons of water is equal to a lake having an area of a square mile over a depth of 33 feet, or to a column of water 10 feet square passing a given point at a rate of more than 1¼ miles every minute. Most of the drainage pumps were designed especially by the mechanical engineer of the sewerage and water board to meet local requirements, and were built in accordance with these designs, without any guarantee that they would even pump water at all. They are, in effect, siphons over a division wall between the low level drain from which they pump and the higher level drain into which they discharge. At the summit of these siphons, properly designed screw blades, operated by a motor through a horizontal shaft, impel the water forward after the pump has been primed by the exhaustion of the air from its case, accomplished by a vacuum pump.

This arrangement results in accessibility of all parts for maintenance and repairs, in the avoidance of gates and check gates and of great depths of excavation and foundation costs, and the simplification of the starting of the various units as they are needed. The greatly increased economy and efficiency which this type of pump and this arrangement have now demonstrated are fully recognized.

The main drains of the drainage system are called locally "covered and lined canals." They are built of concrete, reinforced with steel, and are often 25 feet wide and from 9 to 10 feet deep, with V-shaped bottoms to facilitate the movement of small or dry weather flows. These and all other drains, as well as the sewers in New Orleans, operate purely by gravity with good falls or slopes to the pumping stations, each station, by its performance, creating artificially a low outlet where none could exist otherwise. There is no reservoir capacity other than the drains or sewers in either case; as the water reaches each pumping station it must be lifted.

On the sewerage system there are seven intermediate lift pumping stations which pump the sewage from the low level gravity sewer, leading to them, into the higher level gravity sewer, leading away from them, through lifts of from 8 to 15 feet; and there are three final discharge sewage pumping stations which discharge the sewage, under pressure, through cast iron pipe lines into the river. The pumps at the latter stations make lifts of from 40 to 80 feet, depending on the level of the water in the river, and the friction in the long pressure mains through which they discharge.

The seven intermediate lift sewage pumping stations are interesting, because they are operated without any screening of the sewage and without any attendants, the pumps being automatically started or stopped one at a time by float-operated switches actuated by the level of the sewage in the low level sewer. The pumps are located in dry wells, and set down deep enough to be self priming. One of the most difficult problems to be solved has been to design pumps that would operate satisfactorily under these conditions. People will throw rags and similar matter into the sewers, and rags so seriously obstruct the usual type of low lift pump that screening of the sewage alone will permit it to operate with reasonable efficiency; and screening calls for an attendant at each station all the time and for an objectionable screening removal service. To avoid this, an entirely new type of centrifugal pump has been devised by the board's mechanical engineer, and installed at these stations. It is called a "trash pump," and is just that. These pumps at the New Orleans stations have 12-inch suction and discharge openings; and a 12-inch ball or a succession of 12-inch balls, or a few table cloths or napkins or old clothes or kitchen or toilet utensils, are all the same to these pumps; any trash that can get into them at all is bound to go through and has no effect to decrease their efficiency, which is high through a wide range of lifts.

The water supply of New Orleans is taken from the Mississippi River at the extreme upper end of the city. Mississippi River water is very muddy, averaging 650 parts per million of suspended matter, and rather hard, but not so bad as river waters generally are in number of bacteria, and especially in the number of *B. coli* indicative of pollution. The suspended matter in the river water, however, is mostly very finely divided clay, and is impossible to remove in any practicable time by plain subsidence.

THE PARKS OF NEW ORLEANS

1. City Park from Delgado Art Museum. 2. Tropical Road, City Park. 3. West End Park, Lake Pontchartrain.

TREATMENT OF WATER SUPPLY

The method of treatment at New Orleans is a continuous process: The raw water pumped from the river first passes through a grit chamber having a capacity of about one hour's supply; then it passes the chemical flow governing apparatus on its way to the mixing channels. This apparatus governs flows of solution of ferrous sulphate and of milk of lime which enter the main flow of water proportional to the flow of water. The lime is added at the point where the main flow of water enters the mixing channels, and the iron at the point about half way through the mixing channels. These channels are a series of passage ways which cause the water to flow back and forth and up and down through a distance of about a mile, and which require about an hour of travel. This results in a perfect mixture of chemical solutions with the water and in perfect and uniform chemical reactions without any such violent agitation as would tend to break up flakelike hydrates, which act to entangle and bring together the suspended matter which the water contains. Passing out of the mixing channels, the water goes through settling basins of about seven hours' capacity, where the subsidence of the suspended matter is rapidly effected.

The use of lime as applied in New Orleans is not only to assist in coagulation of the suspended matter in the water but also for the softening of the water, the dissolved carbonates of lime and magnesia in the effluent being reduced always to about 40 parts per million.

After the water passes the settling basins it goes directly to the filters, which are of the so-called mechanical type, but are open gravity sand filters. The water passing to the filters usually does not carry more than 30 parts per million of suspended matter, and this is so effectually coagulated that in rapid passage through very coarse sand every particle of suspended matter and practically all bacteria are removed, the resulting effluent being clear, relatively soft, and of excellent sanitary quality.

After filtration, on its way to the pumps, which deliver it into the city distribution system, the water is given a treatment, proportional to the flow of water, of chlorin, roughly, about 1½ pounds per million gallons, for sterilization. This general process has been in use since 1909, and has given most excellent results in every way. The New Orleans plant is among the first of the larger plants of this character, many of which are now in operation, and it has fully met the hopes and expectations of those who planned it.

In this system the cleaning of the filters is effected by sending filtered water backward through them at a very rapid rate for a short period. The "wash water" used for this purpose, of course, has to be wasted. Usually an appreciable percentage of the water filtered has to be utilized for filter washing. The New Orleans plant has the exceptionally low record of only 0.5 per cent. of the water filtered required for filter washing.

The soil of New Orleans is all alluvial, composed of varying proportions of very fine sand and of soft or softer clay, with peaty strata frequently, and often with cypress stumps or logs in very large number. The construction and main-

tenance of sewers, drains, water mains and other underground structures, and of reservoirs, etc., under these soil conditions has itself been an interesting and often a difficult and expensive problem. Work under these conditions, particularly where resources were limited and the dollar had to be extended to cover the greatest possible results in service, is certain to carry some surprises and some grief.

The New Orleans water, sewerage and drainage systems, however, have from the day of their first tryout gone into service and given service continuously ever since. Clear, safe water under adequate pressure and up to the United States Public Health Service standard has been constantly available since Feb. 7, 1909, when the filters and purification systems were first tried for their intended use. Sewage removal from all premises from the first day of their connection with the sewers has been effective and continuous, and the storm water drainage system has never failed to go to the limit of its capacity in the prompt removal of accumulating storm flows.

The water consumers of New Orleans are all metered; but the water rates are so low that the small consumer, especially, is not sufficiently interested to prevent a good deal of needless waste, and the consumption per capita supplied has been gradually increasing for the last four or five years, having increased nearly 25 per cent. in that period.

EFFECT OF WATER SUPPLY ON MORTALITY RATE

The accompanying tabulation of local mortality statistics illustrates, probably better than anything else, the vital bearing of sanitary conditions on one question in which every one has a real interest, namely, the duration of the average human life in the community in which he lives, because it has a very close connection with the health, comfort, prosperity and probable length of life of his loved ones and of himself.

SUGAR CANE READY FOR THE MILL

If the death rate of New Orleans, as proved in this tabulation, before either of these systems was put into effect, that is, from 1890 to 1899, was such that the average expectancy of life was only 36.7 years, and if, as one after another these systems have been put into use and brought gradually to their maximum usefulness, the general death rate has gradually reduced until in 1919 it was at that point which indicates an average expectancy of life of fifty-five years, it would seem that the foundation work without which this increase in life expectancy of eighteen years could not have possibly been obtained, is, from this point of view alone, worth its cost.

Calculated exactly in dollars, the average per capita cost paid either in taxes or water rates by the people of New Orleans for the sewerage, water and drainage systems for construction, maintenance and operation and interest to attain this result from 1895 to date has been about $87, gradually increasing as more and more benefits to more and more people were provided, from about $1 per annum per capita from 1895 to 1900, before any benefits were felt, to $6.60 per capita per annum in 1919, when very nearly the whole population received the full benefit of all three systems

According to the 1918 financial statistics of cities, compiled by the United States Census, cities of 300,000 or over of population collected from their people on an average, 79 per cent. per capita more for their water supply than New Orleans collected, and in net revenue available for expenditure for every form of municipal service, 73 per cent. more than New Orleans. In both of these items, New Orleans shows the lowest per capita collections of any of the twenty-two cities of 300,000 population or over.

MORTALITY STATISTICS

	Death Rate Per 100,000 from		Corresponding Life Expectancy Per 1,000 Based on Total Death Rate		
Date	Malaria	Typhoid*	All Causes	Years	Comment
1880–1889	156	21	28.6	35.0	No adequate drainage and vaults; cesspools, foul gutters and rain water cisterns were everywhere with mosquitoes abundant †
1890–1899	104	39	27.2	36.7	
1900–1909	26	38	22.6	44.2	From 1900, drainage improvements were effective and increasing
1910–1919	7	21	20.4	49.0	Connections to sewers started in 1906 and to water mains in 1909, with gradual increasing utilization of both systems
1919	4	13	18.2‡	55.0	93% of population served by sewers; 96% by water

* Typhoid in New Orleans appears never to have been water borne, but to have been due to importation and local communication through milk, food, etc., by insects or by carriers. An abundant supply of perfectly safe water with adequate facilities for cleansing and prompt removal of all infected material through the sewerage system are the only helpful influences which the sewerage or water system can contribute toward its further reduction. The increased typhoid from 1890 to 1909 was probably due to the gradual introduction of toilets draining to cesspools, which too frequently overflowed (illegally) into the old open street gutters to get rid of their surplus water.

† Since 1900, the decrease in the number of mosquitoes of all kinds has been marked and progressive as drainage has been extended and improved, as the sewers have acted to subdrain the soil, as rain water cisterns have gradually disappeared, and as open gutters have given place to pipe drains or been provided with outlet conditions which prevented standing water in them. Also, as a matter of great importance following the subsurface drainage, burials above ground are no longer necessary, and cellars can be dug and used in any part of the city, thus affording an enormous increase in property values through the increased space available.

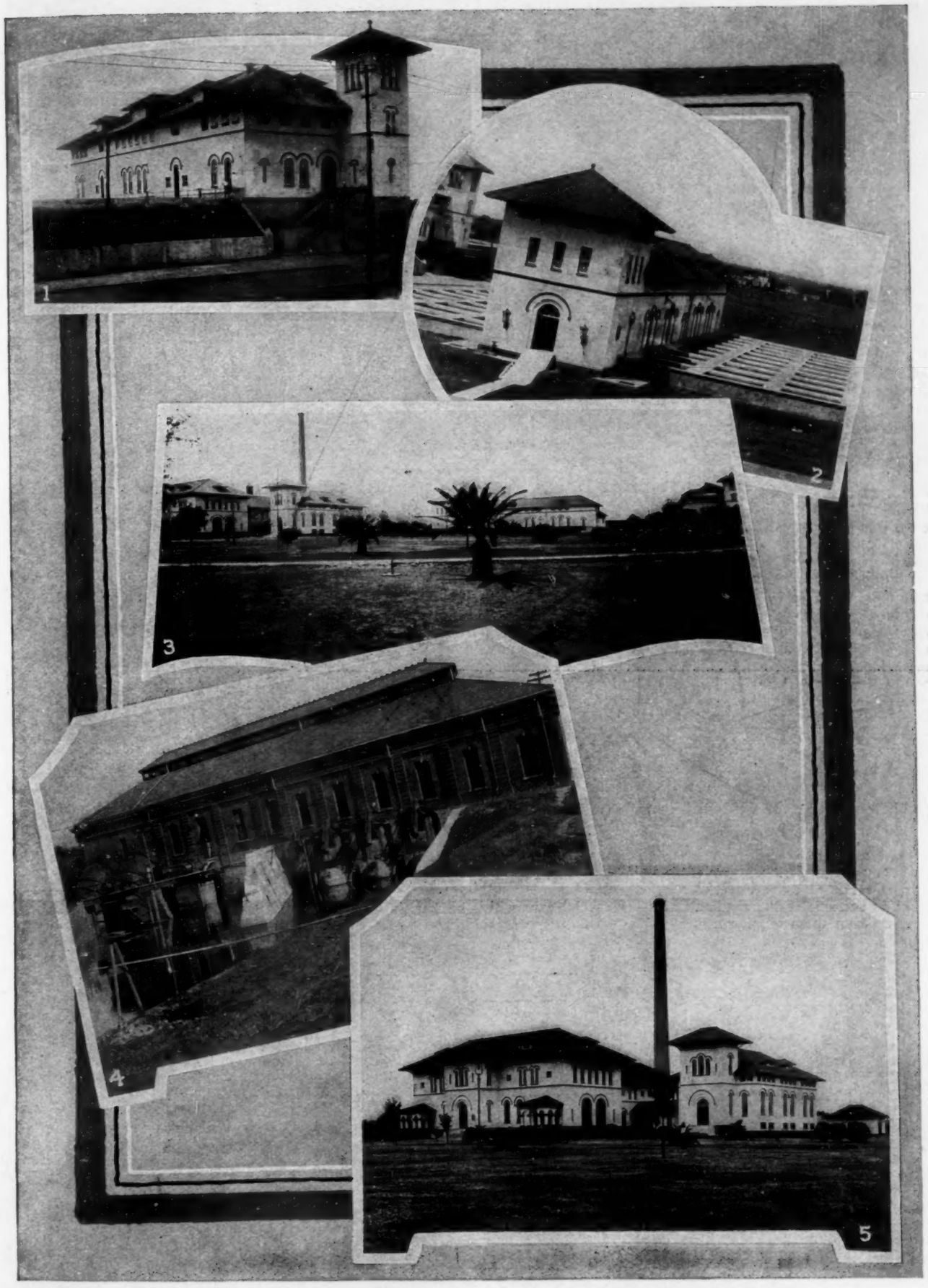
‡ Of this 18.2, 1.75 was due to influenza exclusive of 100 additional due to pneumonia. It would appear, therefore, as though an average death rate of 18 per thousand is not too good to hope for in the early future, notwithstanding the too high mortality among the colored (one third of the population), and the large number of deaths in city hospitals of nonresident patients brought in from Louisiana and surrounding states. Better education and housing facilities for the colored and less well to do population generally should bring still further improvement.

VACATIONING AROUND NEW ORLEANS

On the shores of Lake Pontchartrain, easily accessible by electric car or automobile is West End, one of the delightful breathing spots which surround New Orleans. There is a great seawall, in back of which is a wide area of beautiful driveways, gardens and trees. Here, and also at Spanish Fort or Milneburg are excellent facilities for lounging and resting, for fishing, or other vacation delights.

Convenient also to the city are Waveland, Pass Christian, Gulfport, Long Beach and Ocean Springs—famous resorts whose names are so familiar as to conjure up at once thoughts of golf, tennis, bathing, fishing, boating, or the other pastimes of the convention vacationist.

New Orleans promises true Southern hospitality. Its facilities for instruction, for entertainment and for pleasure will be fully at the service of its guests.



THE SANITARY FACILITIES OF NEW ORLEANS

1. Head House, Water Purification Station. 2. Filters, Water Purification Station. 3. Municipal Water Filtration Plant.
4. Exterior, one of large Drainage Stations. 5. Main Water Works Pumping Station and Power Stations.

TRANSPORTATION

Winter Tourist Rates Announced

The managers of the several passenger bureaus and traffic committees have advised that winter tourist fares will be in effect to New Orleans for the coming annual session of the American Medical Association. Tickets will be on sale at principal railroad centers up to April 30. They will be limited for return passage to May 30.

Round trip fares from Chicago, it is announced, will be $51.03; from St. Louis, $38.02; from Indianapolis, $46.70; from Omaha (via Chicago), $78.15, and (via St. Louis) $58.50; from Louisville, Ky., $40.35; from Cleveland, $58.34; from Boston, $83.94; from New York, $73.14; from Washington, D. C., $60.93; from Philadelphia, $68.28; from Denver (via Chicago), $87.70, (via St. Louis) $74.05; from Portland, Ore., $147.73; from San Francisco or Los Angeles, $113.85. To all the foregoing fares, a war tax of 8 per cent. should be added. At a slight additional cost and in some instances for the same fare, diverse routes may be had from points from which tourists fares are quoted. The rates named above apply when going and returning by the same route.

These winter tourist rates are not in effect from points in certain Southern states. The following one way fares are announced: from El Paso, Texas, $38.70; from Dallas, Texas, $18.28; from Jackson, Tenn., $13.27; from Augusta, Ga., $19.17; from Birmingham, Ala., $10.65. To these rates 8 per cent. war tax must also be added.

Consult Local Ticket Agent

Those who are planning to go to New Orleans should consult the local ticket agent in their home town in order to obtain full information regarding rates, time limits, extensions and stop-over privileges which may be had on the railroad tickets to New Orleans. It is advisable to make these inquiries at an early date as local ticket agents may have to ask for information desired, and except in the larger cities, it may be necessary to obtain a special form of ticket from some central ticket office. Neglecting to arrange for railroad tickets until just before the time for leaving home may make it necessary for the ticket agent to sell a full fare one way ticket since he may have neither the proper form nor the authority to sell these winter tourist excursion tickets. The importance of an early inquiry is emphasized.

Special Trains

Special trains from Chicago to New Orleans, to be known as the "American Medical Special" and the "Chicago Special," will be arranged to run over the Illinois Central Railroad Lines as sections of the regular trains—or special cars will be carried on these regular trains—as Pullman reservations warrant. There are three trains leaving Chicago daily for New Orleans: at 8:45 a. m., at 12:30 p. m. and 6:15 p. m. These trains are scheduled to arrive in New Orleans, respectively, at 11 a. m., 11:15 a. m. and at 8:45 p. m. Pullman reservations can be made either through the railroad ticket office at your own home, or by addressing Mr. J. W. Stevenson, district passenger agent, Merchants Loan and Trust Building, 112 West Adams Street, Chicago. Members of the House of Delegates should plan to leave Chicago not later than 6:15 p. m., Saturday, April 24. Those who are interested chiefly in the meetings of the Scientific Assembly will reach New Orleans in ample time for the general opening meeting, which will be held on Tuesday evening, if they leave Chicago as late as 12:30 p. m., Monday, April 26.

Sleeping Cars to Be Parked

The R. & S. Tourist Company, 107 West Jackson Boulevard, Chicago, is arranging to run a special train leaving Chicago on Sunday, April 25, about noon, via the Illinois Central Railroad, and to arrive in New Orleans during the afternoon of Monday following. This train will return, leaving New Orleans about 7 p. m., April 30, and arriving in Chicago, Saturday evening, May 1. Arrangements will be made so that the cars will be parked in New Orleans at a convenient location. This will permit of the cars being used as sleeping quarters during the time of the annual session. The cost covering railroad fare, Pullman accommodations going and coming and during the days spent in New Orleans, is announced to be $102.75 and up in accordance with the Pullman accommodations reserved. Particulars and definite information can be obtained by addressing the company. This use of Pullman sleeping cars by organized parties is commonly followed at the time of the Mardi Gras and other large gatherings at New Orleans.

Going to New Orleans by Boat

The *Comas,* one of the steamships of the Morgan Line, is announced to sail from New York, April 21, for New Orleans, and from New Orleans on the return trip on the morning of May 1. This boat can carry seventy-one first class passengers. In addition, there is space for thirty second class passengers. Particulars regarding time of sailing, rate of passage and other matters can be obtained by addressing Mr. A. J. Poston, general agent, Southern Pacific Lines, 165 Broadway, New York.

Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., who has undertaken to arrange for a party to go by boat from Boston to New Orleans, advises that he is experiencing some difficulty in securing a first class ship for the trip. However, he has in prospect a 3,000 ton vessel and states that if practical rates can be secured, the prospects are that this boat will be filled to capacity when it leaves Norfolk.

REGISTRATION

The Importance of Registering Early—A Few Suggestions Which Will Facilitate Registration

The Bureau of Registration will be located in the Josephine Hutchinson Memorial Building, Canal Street, between Villere and Robertson streets. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened, and a bureau of information established in connection with the Registration Bureau. Here may be secured copies of the *Daily Bulletin,* which announces the names of visitors and other important convention material.

Every one who registers will be required to fill out completely the spaces on both parts of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin.*

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster may occupy a considerable time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1920 dues are unpaid should present his filled in registration card with the amount of his Fel-

lowship dues ($5) at one of the windows and marked "Cash." Here, too, there will be occasioned some delay; but the work of registering will be conducted as promptly as possible.

4. It will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than April 19. Any applications received later than April 19 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time so that he can use it in registering at the New Orleans Session, and he may be required to make a second payment of his Fellowship dues, which must be held until the records at the headquarters can be consulted after the close of the session, when any excess payment will be satisfactorily adjusted.

If, however, a member of the Association neglects to qualify as a Fellow before reaching New Orleans he may be entered as a Fellow at the meeting by the following procedure: He should present a filled in registration card, together with a formal application for Fellowship at the window marked "New Fellows." These applications for Fellowship can be obtained at Window No. 1 of the Registration Bureau or from the members of the Committee on Registration. In order to qualify as a Fellow, the applicant must be officially reported as a member of the constituent association of the state in which he resides, and in addition to filing this formal application, he must pay his annual Fellowship dues for the current year; if already a subscriber to THE JOURNAL, with his subscription paid for a term to or beyond Jan. 1, 1921, no additional payment is necessary. If subscription is not paid in full for the current year, the payment of a sum to extend it to Jan. 1, 1921, is required.

Those who will apply for Fellowship at New Orleans should provide themselves, before leaving their homes, with certificates of membership signed by the secretary of their state association certifying to their being members in good standing for 1920 in the state and county branches of the organization; a membership card for 1920 issued by the constituent association will be accepted. Failure to provide themselves with such a certificate will necessarily subject them to considerable delay in registering, if it does not preclude their being able to qualify for Fellowship at the time of the meeting. It will not only subject them to great annoyance, but will also be an imposition on other physicians desiring to register and attend the meetings of this session.

THE JOSEPHINE HUTCHINSON MEMORIAL BUILDING

Scientific Exhibit, Registration, Commercial Exhibit, Information Bureau and Postoffice in This Building
Meeting Place of the Sections on Stomatology, Dermatology, and Urology

HOTEL ACCOMMODATIONS

Dr. J. J. Wymer, 921 Canal St., New Orleans, Chairman of the Committee on Hotels, will handle promptly requests for reservations for lodgings. In writing to Dr. Wymer, he should be advised of the number who will be in the party, the time of arrival in New Orleans and how long the party will stay in that city, as well as the character of the lodgings desired. In addition to the available accommodations in the hotels, this committee has arranged to make available a large number of rooms in well appointed boarding houses as well as in private homes. Those who plan to attend the annual session are urged to make their reservations as promptly as possible. It is desirable that when New Orleans is reached, the party shall know exactly where they expect to be lodged. There will be an information bureau at each railroad station during the days of the session. These will be in charge of medical students from Tulane who will assist incoming Fellows to secure lodgings or direct them to the places where these are reserved.

POSTOFFICE

An Association Postoffice will be maintained in connection with the Registration Bureau in the Josephine Hutchinson Memorial Building. Guests are requested to order mail addressed to them "Care American Medical Association, Josephine Hutchinson Memorial Building, New Orleans, La.," or to their hotels, as preferred.

CLINICS IN NEW ORLEANS

The Local Committee on Arrangements reports that the medical profession of New Orleans is arranging a series of clinics to be conducted by members of the local profession on April 22 to 24, inclusive, and also on April 26 and 27 and May 1. These clinics will be open to Fellows of the Scientific Assembly from other states as well as to the members of the Louisiana State Medical Society, whose annual session is called for the week before the Association's session.

MEETING PLACES AND SECTION HEADQUARTERS

The following have been designated as general and section hotel headquarters, and as meeting places* for the New Orleans session—April 26 to 30:

HOUSE OF DELEGATES: *Orleans Parish Medical Society Building.*

PRACTICE OF MEDICINE: St. Charles. *Elks Hall.*

SURGERY, GENERAL AND ABDOMINAL: Grunewald. *Grunewald, Convention Hall.*

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Grunewald. *Grunewald, Convention Hall.*

OPHTHALMOLOGY: Monteleone. *Moose Hall.*

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Monteleone. *Moose Hall.*

DISEASES OF CHILDREN: St. Charles. *Elks Hall.*

PHARMACOLOGY AND THERAPEUTICS: Planters. *Grunewald, Green Room.*

PATHOLOGY AND PHYSIOLOGY: Grunewald. *Grunewald, Green Room.*

STOMATOLOGY: Lafayette. *Hutchinson Memorial Building, Faculty Room.*

NERVOUS AND MENTAL DISEASES: Lafayette. *Charity Hospital Amphitheater.*

DERMATOLOGY: De Soto. *Hutchinson Memorial Building, Lower Amphitheater.*

PREVENTIVE MEDICINE AND PUBLIC HEALTH: De Soto. *Loyola Hall.*

UROLOGY: St. Charles. *Hutchinson Memorial Building, Lower Amphitheater.*

ORTHOPEDIC SURGERY: Grunewald. *Charity Hospital Amphitheater.*

GASTRO-ENTEROLOGY AND PROCTOLOGY: Lafayette. *Loyola Hall.*

GENERAL HEADQUARTERS: Grunewald.

SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBIT, INFORMATION BUREAU AND BRANCH POSTOFFICE: Hutchinson Memorial Building.

* Meeting places in italics.

KEY TO MAP

1. Hutchinson Memorial Building.
2. Charity Hospital.
3. Loyola Hall.
4. Moose Hall.
5. Orleans Parish Medical Society Building.
6. Elks' Hall.
7. Ear, Nose and Throat Hospital.
8. Grunewald Hotel.
9. Planters Hotel.
10. Monteleone Hotel.
11. Cosmopolitan Hotel.
12. St. Charles Hotel.
13. Southland Hotel.
14. Osborne Hotel.
15. De Soto Hotel.
16. Lafayette Hotel.
17. The Shrine Mosque.
18. The Atheneum.

NONAFFILIATED ORGANIZATIONS

The following organizations have announced that they will hold meetings in New Orleans during the days immediately preceding those on which the Scientific Assembly of the American Medical Association will meet: Air Service Medical Association of the United States; American Radium Society; Association for Study of Internal Secretions; Association of American Teachers, Diseases of Children; Association of Military Surgeons of the United States; Louisiana State Medical Society; Medical Veterans of the World War, and the Radiological Society.

GUESTS FROM FOREIGN COUNTRIES

Among others, Sir Humphrey Davy Rolleston and Col. H. J. Waring of London; Drs. Norman Walker and A. H. Freeland Barbour of Edinburgh; Prof. Victor Morax, Paris; Prof. J. C. Connel, Kingston, and Alexander Primrose, Toronto, are expected to be in attendance at the New Orleans Session. It is anticipated there will also be a number of physicians from Mexico and South America. Accredited physicians from foreign countries will be registered as "invited guests" and may participate in the functions of the annual session.

ENTERTAINMENT

(NOTE.—The official badge will be required for admission to entertainments and other places to which entrance is granted to those in attendance on the annual session.)

The President's Ball

While there will be many and varied entertainments provided for amusement of the Fellows, and their wives, daughters and friends, an original and characteristic program has been perfected for an event to be known as the President's Ball. This will be a carnival ball with a number of tableaux representing medical subjects or interest, humor, and perhaps a little satire. The indications are that this ball will be fully as beautiful as any heretofore given, even in the halcyon days of prewar carnival revelry. It will be carried out in exact accordance with the historical procedure for such affairs. The scenery and settings will be specially painted and prepared to suit the theme. There will be the king with his royal court who will preside over the cast, limited to 150 of the most worthy subjects, all of them gorgeously costumed as will be befitting the characters they portray and the illustrious onlookers before whom they will have the honor of appearing. The king will have his queen and the dukes of his court, their maids, and after the completion of the tableaux they with the maskers will dance in a series until every one of the fair guests has been called out. After this has been accomplished the maskers will gradually disappear, black coats will come on, and the dancing will continue. Dr. Amedee Granger, Chairman of the Committee on Entertainment, 921 Canal Street, requests that there be submitted to him the names of ladies who will be interested in taking part in the "Carnival Ball," in order that they may be informed concerning the unique features of this event and that they may be assigned "call out seats."

This form of entertainment is novel so far as the American Medical Association is concerned. It is essentially characteristic of the happiest life in the Crescent City. The ball will be given on the evening of April 28.

Fete Champetre

On April 29, a Fete Champetre will be given at the City Park and the Committee on Entertainment is doing all in its power to make this fete both entertaining and instructive.

Entertainment for Visiting Ladies

Trips are being arranged through the historical and beautiful sections of New Orleans for the visiting ladies. These will be personally conducted by members of the Louisiana Historical Society in the forenoon. In the afternoons there will be receptions and automobile rides.

AMERICAN MEDICAL GOLF TOURNAMENT

The Sixth Tournament of the American Medical Golf Association will be held at the New Orleans County Club, April 26, under the auspices of the Local Committee: Clyde Lynch, chairman; Larry DeBuys; John Elliott, Jr., secretary, 803 Audubon Building, New Orleans.

The events will take place both morning and afternoon. They consist of the Association championship, thirty-six holes gross, "Frisco" trophy; Association handicap, thirty-six holes, Detroit trophy, and choice score handicap, thirty-six holes, New Orleans trophy. By order of the 1919 meeting, the members of the Handicap Committee are: Charlton Wallace, Eastern District, 11 East Forty-Eighth Street, New York; J. J. Coons, Central District, 122 East Broad Street, Columbus, Ohio, and Fred Bailey, Western District, 816 University Club Building, St. Louis.

Any Fellow of the American Medical Association in good standing, who has a degree of M.D. becomes automatically a member of the American Medical Golf Association, on acceptance of the by-laws and payment of the enrolment fee. The enrolment fee consists of $2, payment of which confers life membership. A playing fee of $1 is charged on entrance in the tournament.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the third floor of the Josephine Hutchinson Memorial Building of the Medical Department of Tulane University, on the north side of Canal Street, between Villere and Robertson Streets, about three blocks from the Grunewald Hotel. The exhibitors who have so far made application for space are as follows:

MEDICAL DEPARTMENT, U. S. ARMY, Washington, D. C.: Exhibit on Scientific War Material.

LOUISIANA STATE BOARD OF HEALTH, New Orleans: Educational Exhibit.

AMERICAN MEDICAL ASSOCIATION:
- Council on Pharmacy and Chemistry.
- Propaganda Department.
- Chemical Laboratory.
- Council on Medical Education.
- Council on Health and Public Instruction.
- Exhibits showing the activities of the Association.

PRUDENTIAL LIFE INSURANCE COMPANY, New York: Exhibit on Graphic Charts, Showing Statistics of Leprosy, and the Sanitary Progress of New Orleans.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: Exhibit Showing the Activities of the Organization.

ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE, New York: Exhibit of Charts and Folders Explaining Development of Work.

MAYO CLINIC, Rochester, Minn.: Exhibit of Charts and Photographs.

DR. MARTIN H. FISCHER, Cincinnati General Hospital, Cincinnati: Exhibit on Colloid Chemistry in the Analysis of Various Problems in Physiology, Pathology and Pharmacology.

DR. VICTOR D. LESPINASSE, Chicago: Exhibit on Spermatogenesis and Sterility.

DR. ANGELO L. SORESI, New York: Scientific Exhibit—Specimens—Illustrations—Instruments.

DR. WILLIAM H. MERCUR, Pittsburgh: Exhibit on the Method of Classification and Indexing of Case Records and Reprints.

DR. ALFRED A. STRAUSS, Chicago. Exhibit on Stomach and Intestinal Surgery—Sterility—Muscle and Tendon Transplantation.

DR. CHARLES WINFIELD PERKINS, New York: Exhibit on Gunshot Injuries of the Long Bones, Showing Osteogenesis.

DR. JAMES T. CASE, Battle Creek Sanitarium, Battle Creek, Mich.: Exhibit on Diet and Nutrition.

DR. HENRY A. COTTON, New Jersey State Hospital, Trenton, N. J.: Exhibit on Medical and Surgical Work of the Institution.

In addition, scientific material presented by New Orleans institutions and members of the local profession will be shown in Professor Bass' private laboratory.

The amphitheater on the third floor will be used for movin pictures, lantern slides and roentgen-ray exhibits during the time of the meeting. A detailed program of the moving picture exhibit will be announced later, and a final program and complete list of exhibitors will appear in the official program.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING MEETING

SHRINERS' TEMPLE, ST. CHARLES AVENUE AND CLIO STREET

Tuesday, April 27—8:30 p. m.

Music.

Call to Order by the President, ALEXANDER LAMBERT, New York.

Invocation. Most Reverend J. W. SHAW, Archbishop of New Orleans.

Announcements, ALBERT E. FOSSIER, Chairman of the Local Committee of Arrangements.

Address of Welcome. HON. MARTIN BEHRMAN, Mayor, City of New Orleans.

Address of Welcome. President, Louisiana State Medical Society.

Address. HON. JOHN M. PARKER, Governor-Elect of Louisiana.

Music.

Introduction and Installation of President-Elect WILLIAM C. BRAISTED, U. S. Navy.

Address. WILLIAM C. BRAISTED.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program, nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, as well as lists of committees, programs of the General Meeting, lists of entertainments, map of New Orleans and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN ELKS' HALL

OFFICERS OF SECTION

Chairman—JAMES S. MCLESTER, Birmingham, Ala.
Vice Chairman—JOSEPH H. PRATT, Boston.
Secretary—G. CANBY ROBINSON, St. Louis.
Executive Committee—HENRY A. CHRISTIAN, Boston; LAWRENCE LITCHFIELD, Pittsburgh; WALTER L. BIERRING, Des Moines, Iowa.
(Stenographer—Dr. G. G. TAYLOR, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address. JAMES S. MCLESTER, Birmingham, Ala.
2. The Clinical Interpretation of Basal Metabolic Rate Estimations. HENRY S. PLUMMER, Rochester, Minn.
3. The Nature of Fever. WILLIAM D. SANSUM, Chicago.
4. Types and Treatment of Pellagra. STEWART R. ROBERTS, Atlanta, Ga.
5. The End-Results of Focal Infections. BRYCE W. FONTAINE, Memphis, Tenn.
6. Abscess of the Lung. U. J. W. PETERS, Birmingham, Ala.
7. The Clinical Diagnosis of Obstruction of the Hepatic Veins. CHARLES F. HOOVER, Cleveland.
8. Phlebectasis of the Diaphragmatic Area and of the Lower Thoracic and Upper Abdominal Regions. WILLIAM GERRY MORGAN, Washington, D. C.

Thursday, April 29—2 p. m.

9. An Address. SIR HUMPHREY DAVY ROLLESTON, London.
10. Oxycephaly: Its Occurrence in Negroes. GEORGE DOCK, St. Louis.
11. Clinical Experience with a Standardized Dried Aqueous Extract of Digitalis. JOSEPH H. PRATT, Boston.
12. A Study of the Bile Pigments in Pernicious Anemia. JOHN P. SCHNEIDER, Minneapolis.
13. Spondylitis and Abdominal Pain. DOUGLAS VANDERHOOF, Richmond, Va.
14. The Influence of Quantitative Methods in the Advance of Clinical Medicine. EUGENE S. KILGORE, San Francisco.
15. Frozen Sections from Two Cases of Aneurysm of the Thoracic Aorta. GEORGE W. NORRIS and GEORGE FETTEROLF, Philadelphia.

Friday, April 30—2 p. m.

Election of Officers

16. Hints for the Diagnosis of Disease of the Gallbladder. LEWELLYS F. BARKER, Baltimore.
17. Gout: A Clinical Study of 116 Cases. CHARLES SPENCER WILLIAMSON, Chicago.
18. Renal Glycosuria. JAMES E. PAULLIN, Atlanta, Ga.
19. The Treatment of Diabetes Complicated by Pulmonary Tuberculosis. NELSON W. JANNEY, Santa Barbara, Calif.
20. Arterial Hypertension Associated with Endocrine Dyscrasia. WILLIAM ENGELBACH, St. Louis.
21. Syphilis of the Kidney. LOYD THOMPSON, Hot Springs, Ark.
22. Angina Abdominalis and Other Abdominal Manifestations of Arteriosclerosis. ALFRED STENGEL, Philadelphia.
23. The Effect of Tonsillectomy on the Recurrence of Acute Rheumatic Fever and Chorea in Children. WILLIAM P. ST. LAWRENCE, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN GRUNEWALD, CONVENTION HALL

OFFICERS OF SECTION

Chairman—DEAN D. LEWIS, Chicago.
Vice Chairman—MALVERN B. CLOPTON, St. Louis.
Secretary—GEORGE P. MULLER, Philadelphia.
Executive Committee—WILLIAM D. HAGGARD, Nashville, Tenn.; E. STARR JUDD, Rochester, Minn.; JOHN T. BOTTOMLEY, Boston.
(Stenographer—Miss LIDIE C. ALEXANDER, Philadelphia)

Wednesday, April 28—9 a. m.

1. One Hundred Goiter Operations: Mistakes in Retrospect. JAMES T. MASON, Seattle.
2. Diagnosis and Management of Intrathoracic Thyroid Growths (Lantern Demonstration). FRANK H. LAHEY, Boston.
3. Advantages of Local Anesthesia in Thyroid Operations (Lantern Demonstration). JOSEPH R. EASTMAN, Indianapolis.
4. Technic of Thyroidectomy (Lantern Demonstration). WILLARD BARTLETT, St. Louis.
   Discussion of papers 1, 2, 3 and 4 to be opened by HENRY S. PLUMMER, Rochester, Minn.; WILLIAM D. HAGGARD, Nashville, Tenn.; EMIL GOETSCH, Brooklyn, and EDWARD G. JONES, Atlanta, Ga.
5. Chronic Cystic Mastitis (Lantern Demonstration). JOSEPH C. BLOODGOOD, Baltimore.
   Discussion to be opened by WILLIAM C. MACCARTY, Rochester, Minn.
6. Brain Abscess. ALFRED W. ADSON, Rochester, Minn.
   Discussion to be opened by HARVEY CUSHING, Boston, and ARTHUR C. STRACHAUER, Minneapolis.
7. Hemangioma and Lymphangioma: Their Response to the Injection of Boiling Water (Lantern Demonstration). FRANCIS LE S. REDER, St. Louis.
   Discussion to be opened by JOHN A. WYETH, New York; RUDOLPH MATAS, New Orleans, and CURTIS F. BURNAM, Baltimore.

Thursday, April 29—9 a. m.

8. Chairman's Address. DEAN D. LEWIS, Chicago.
9. Squamous-Cell Carcinoma of the Kidney. ALEXANDER PRIMROSE, Toronto.
   Discussion to be opened by ARTHUR D. BEVAN, Chicago.
10. Congenital Hypertrophic Pyloric Stenosis in Infants: Review of 175 Cases in Which the Fredet-Rammstedt Operation was Performed. WILLIAM A. DOWNES, New York.
    Discussion to be opened by DEAN D. LEWIS, Chicago.

11. Ulcer of the Jejunum Following Gastro-Enterostomy.
WALLACE I. TERRY, San Francisco.
Discussion to be opened by E. STARR JUDD, Rochester, Minn.
12. Surgery of Cancer of the Large Intestines.
ARTHUR D. BEVAN, Chicago.
13. Operation for Carcinoma of the Rectum.
GEORGE W. CRILE, Cleveland.
Discussion to be opened by DANIEL F. JONES, Boston.
14. Roentgenologic Experience with Pneumoperitoneum (Lantern Demonstration).
ARTHUR STEIN and WILLIAM H. STEWART, New York.
Discussion to be opened by WILLY MEYER, New York, and GEORGE E. PFAHLER, Philadelphia.
15. Ether Oil Colonic Anesthesia.
WALTER LATHROP, Hazleton, Pa.
Discussion to be opened by JAMES T. GWATHMEY, New York.

Friday, April 30—9 a. m.

Election of Officers

16. Report of Gunshot Wounds of the Chest.
ARTHUR M. SHIPLEY, Baltimore.
Discussion to be opened by JOHN L. YATES, Milwaukee, and JAMES T. GWATHMEY, New York.
17. Importance of the "Vital Capacity" in Thoracic Surgery (Lantern Demonstration).
EVARTS A. GRAHAM, St. Louis.
18. Prevention and Treatment of Pleurisy.
JOHN L. YATES, Milwaukee.
19. Observations on the Relative Value of the Various Operative Procedures Employed in Acute Empyema.
CARL EGGERS, New York.
Discussion to be opened by ALEXANDER LAMBERT, New York; MARTIN B. TINKER, Ithaca, N. Y.; ARVINE E. MOZINGO, Indianapolis, and JAMES F. MITCHELL, Washington, D. C.
20. Fracture of the Femur: A Plea for a Better American Standard. KELLOGG SPEED, Chicago.
Discussion to be opened by JOHN B. WALKER, New York.
21. Mobilization of Injured, Infected or Fractured Joints.
CLARENCE A. MCWILLIAMS, New York.
22. The Use of Bone and Fascia Grafts in the Reconstruction of Bones and Joints (Lantern Demonstration).
ADDISON G. BRENIZER, Charlotte, N. C.
23. Mechanic Stability of Fractures Following Operation (Motion Picture Demonstration).
PAUL B. MAGNUSON, Chicago.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN GRUNEWALD, CONVENTION HALL

OFFICERS OF SECTION

Chairman—REUBEN PETERSON, Ann Arbor, Mich.
Vice Chairman—FRANCIS LE S. REDER, St. Louis.
Secretary—SIDNEY A. CHALFANT, Pittsburgh.
Executive Committee—HOWARD W. LONGYEAR, Detroit; BROOKE M. ANSPACH, Philadelphia; THOMAS J. WATKINS, Chicago.
(Stenographer—Miss LIDIE C. ALEXANDER, Philadelphia)

Wednesday, April 28—2 p. m.

1. Chairman's Address: The Future of Obstetrics and Gynecology as a Specialty.
REUBEN PETERSON, Ann Arbor, Mich.
2. Chronic Leukorrhea: Its Pathology and Treatment (Lantern Demonstration). ARTHUR H. CURTIS, Chicago.
3. Conservation of the Menstrual Function.
WILLIAM J. MAYO, Rochester, Minn.
Discussion to be opened by C. JEFF MILLER, New Orleans.
4. Relation of Hyperplasia of the Endometrium to So-Called Functional Uterine Hemorrhage (Lantern Demonstration). EMIL NOVAK, Baltimore.
5. A Plea for Total Hysterectomy in the Operative Treatment of Fibroid Tumors of the Uterus in Parous Women. JOHN OSBORN POLAK, Brooklyn.
Discussion to be opened by EDWARD E. MONTGOMERY, Philadelphia.
6. Hernia of the Ovary. WILLIAM W. GRANT, Denver.
7. Results of the Exposure of Animal Ovaries to the Rays of Radium (Lantern Demonstration).
JOHN M. MAURY, Memphis, Tenn.
Discussion to be opened by FRANCIS CARTER WOOD, New York.

Thursday, April 29—2 p. m.

8. The Sectional Anatomy of Labor (Lantern Demonstration). A. H. FREELAND BARBOUR, Edinburgh.
9. A Consideration of Stillbirths and Neonatal Deaths in Their Relation to Obstetric Practice (Lantern Demonstration). FRED L. ADAIR, Minneapolis.
Discussion to be opened by EDGAR J. HUENEKENS, Minneapolis, and N. SPROAT HEANEY, Chicago.
10. Abnormal Lactation (Lantern Demonstration).
MATHIAS J. SEIFERT, Chicago.
11. Intra-Uterine Insufflation of Oxygen (Artificial Pneumoperitoneum) for the Determination of Patency of the Fallopian Tubes in Cases of Sterility.
ISADOR C. RUBIN, New York.
Discussion to be opened by EDWARD REYNOLDS, Boston.
12. The Treatment of Obstinate Occipitoposterior Positions.
JOSEPH B. DELEE, Chicago.
Discussion to be opened by RALPH H. POMEROY, Brooklyn.
13. The Policy of Noninterference in the Treatment of Postabortive and Puerperal Infections.
EDWARD L. KING, New Orleans.
14. The Management of Acute Appendicitis in the Later Weeks of Pregnancy. Report of Case Treated by Cesarean Section and Appendectomy.
JAMES M. MASON, Birmingham, Ala.
Discussion to be opened by NORBORNE PAGE COCKE, Birmingham, Ala.

Friday, April 30—2 p. m.

Election of Officers

15. Prolapse of the Urethra in the Female (Lantern Demonstration). RICHARD R. SMITH, Grand Rapids, Mich.
Discussion to be opened by S. M. D. CLARK, New Orleans.
16. An Operation for Pruritus of the Vulva and Anus.
CARROLL W. ALLEN, New Orleans.
17. The So-Called Cases of Nephralgia.
DEWITT B. CASLER, Baltimore.
Discussion to be opened by JOHN T. GERAGHTY, Baltimore.
18. Primary Suture of the Renal Pelvis and Ureter After Removal of Stones.
LE GRAND GUERRY, Columbia, S. C.
Discussion to be opened by BENJAMIN A. THOMAS, Philadelphia.
19. Cysts of the Pancreas (Lantern Demonstration).
JOHN J. GILBRIDE, Philadelphia.
Discussion to be opened by ALBERT J. OCHSNER, Chicago.
20. An Improved Technic for Cholecystectomy Based on an Anatomic Study (Lantern Demonstration).
MOSES BEHREND, Philadelphia.
Discussion to be opened by JABEZ N. JACKSON, Kansas City, Mo., and ALFRED C. WOOD, Philadelphia.
21. Appendicitis Caused by Amebae Dysenteriae. Postoperative Perforation of an Amebic Ulcer of the Cecum (Lantern Demonstration).
EDGAR P. HOGAN, Birmingham, Ala.
Discussion to be opened by WILLIAM F. SHALLENBERGER, Atlanta, Ga.

SECTION ON OPHTHALMOLOGY

MEETS IN MOOSE HALL

OFFICERS OF SECTION

Chairman—ALLEN GREENWOOD, Boston.
Vice Chairman—NELSON M. BLACK, Milwaukee.
Secretary—GEORGE S. DERBY, Boston.
Executive Committee—WILLIAM ZENTMAYER, Philadelphia; ALEXANDER DUANE, New York; CASSIUS D. WESCOTT, Chicago.
(Stenographer—Miss F. E. DILLAN, Indianapolis)

Wednesday, April 28—9 a. m.

1. Chairman's Address. ALLEN GREENWOOD, Boston.
2. Optic Nerve Disturbances in Diseases of the Posterior Nasal Sinuses. JAMES BORDLEY, JR., Baltimore.
Discussion to be opened by GEORGE E. DE SCHWEINITZ, Philadelphia.

3. Optic Neuritis Associated with Disease of the Nasal Sinuses. EDWARD C. ELLETT, Memphis, Tenn.
Discussion to be opened by LEE M. FRANCIS, Buffalo.
4. Ocular Symptoms in Ophthalmic Goiter.
JOHN H. CLAIBORNE, New York.
Discussion to be opened by ALBERT E. BULSON, JR., Fort Wayne, Ind.
5. Mercurochrome-220. A Clinical Laboratory Report on Its Use in Ophthalmology.
WALTER B. LANCASTER, FRANCIS L. BURNETT and LOUIS H. GAUS, Boston.
Discussion to be opened by HUGH H. YOUNG, Baltimore.

Thursday, April 29—9 a. m.

DEMONSTRATION SESSION. EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

6. Address: Extraction of Cataract in Glaucoma.
VICTOR MORAX, Paris.
7. Thermophor Studies in Glaucoma.
WILLIAM E. SHAHAN and LAWRENCE POST, St. Louis.
Discussion to be opened by JOHN O. MCREYNOLDS, Dallas, Texas.
8. Diagnosis of Chronic Intra-Ocular Tuberculosis.
HARRY H. STARK, El Paso, Texas.
Discussion to be opened by WILLIAM C. FINNOFF, Denver.
9. Ethylhydrocuprein in Diseases of the Eye.
ARTHUR J. BEDELL, Albany, N. Y.
Discussion to be opened by HARRY S. GRADLE, Chicago.
10. Communicating Vessels Between Retina and Choroid in Certain Cases of Chorioretinitis, with Remarks on a Fold of the Inner Limiting Membrane.
MARCUS FEINGOLD, New Orleans.
Discussion to be opened by EDWARD JACKSON, Denver.

Friday, April 30—9 a. m.

Election of Officers

Reports of Committees

11. Effect of Cold on the Temperature in the Orbit.
LUCIEN HOWE, Buffalo.
Discussion to be opened by ERASTUS E. HOLT, Portland, Maine.
12. Early Diagnosis of Pituitary Tumor with Ocular Phenomena. WILLIAM L. BENEDICT, Rochester, Minn.
Discussion to be opened by F. PHINIZY CALHOUN, Atlanta, Ga.
13. Four Cases of Sympathetic Ophthalmia with Reference to Treatment with Large Doses of Salicylate of Sodium. HERBERT MOULTON, Fort Smith, Ark.
Discussion to be opened by JAMES M. PATTON, Omaha.
14. A New Operation for the Relief of Dacryocystitis Through the Nasal Route.
MEYER WIENER and WILLIAM E. SAUER, St. Louis.
Discussion to be opened by WILLIAM H. WILDER, Chicago.
15. Restoration of the Margin of the Eyelid by a Free Graft from the Lower Part of the Eyebrow.
JOHN M. WHEELER, New York.
Discussion to be opened by NELSON M. BLACK, Milwaukee.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN MOOSE HALL

OFFICERS OF SECTION

Chairman—JOSEPH C. BECK, Chicago.
Vice Chairman—GEORGE M. COATES, Philadelphia.
Secretary—WILLIAM B. CHAMBERLIN, Cleveland.
Executive Committee—FRANCIS P. EMERSON, Boston; GREENFIELD SLUDER, St. Louis; LEE WALLACE DEAN, Iowa City.
(Stenographer—MISS F. E. DILLAN, Indianapolis)

Wednesday, April 28—2 p. m.

1. Chairman's Address. JOSEPH C. BECK, Chicago.
2. Plastic Surgery: Its Relation to the Otolaryngologist (Lantern Demonstration).
FERRIS N. SMITH, Grand Rapids, Mich.
3. Plastic Surgery of the Face.
MILLARD F. ARBUCKLE, East St. Louis, Ill.
4. Mixed Tumors of the Throat, Mouth and Face.
GORDON B. NEW, Rochester, Minn.
Discussion to be opened by LEE WALLACE DEAN, Iowa City.
5. Thyroid Surgery, Especially as Related to Laryngology.
JOHN F. BARNHILL, Indianapolis.
Discussion to be opened by GEORGE W. CRILE, Cleveland.
6. The Use and Possible Abuse of Radium in the Treatment of Malignant Tumors of the Nose and Throat.
ROBERT SONNENSCHEIN, Chicago.
Discussion to be opened by WILLIAM L. CLARK, Philadelphia, and DUNBAR ROY, Atlanta, Ga.
7. Misleading Symptoms and Roentgen-Ray Findings in Suspected Mastoid Abscess.
RICHMOND MCKINNEY, Memphis, Tenn.
Discussion to be opened by SAMUEL IGLAUER, Cincinnati.

Thursday, April 29—2 p. m.

8. Present Status of Neuro-Otology from the Borderline Standpoint. JOSEPH D. HEITGER, Louisville, Ky.
Discussion to be opened by HAROLD I. LILLIE, Rochester, Minn.
9. Intracranial Lesions Involving the Auditory Vestibular Apparatus. EUGENE R. CARPENTER, Dallas, Texas.
Discussion to be opened by HARVEY CUSHING, Boston.
10. Neurolabyrinthitis Syphilitica.
GEORGE W. MACKENZIE, Philadelphia.
Discussion to be opened by GEORGE M. COATES, Philadelphia.
11. Clinical Manifestations of Infection of the Lateral Sinus.
FRANCIS P. EMERSON, Boston.
Discussion to be opened by WILLIAM E. SAUER, St. Louis.
12. Arthritis Deformans of the Larynx.
HENRY L. LYNAH, New York.
Discussion to be opened by EMIL MAYER, New York.
13. The Indifference of the Laryngologist Toward Tuberculous Laryngitis and the Tuberculosis Problem.
WILLIAM V. MULLIN, Colorado Springs, Colo.
Discussion to be opened by JOHN B. MCMURRAY, Washington, Pa.
14. The Diagnosis and Prognosis of Loss of Vision from Accessory Sinus Disease. LEON E. WHITE, Boston.
Discussion to be opened by HARRY H. STARK, El Paso, Texas, and HANAU W. LOEB, St. Louis.

Friday, April 30—2 p. m.

Election of Officers

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

Report of Committees

Special Report on Local Anesthesia by the Committee on Therapeutic Research.
EMIL MAYER, New York, Chairman; ROSS HALL SKILLERN, Philadelphia, and ROBERT SONNENSCHEIN, Chicago.
Discussion to be opened by RUDOLPH MATAS and CARROLL W. ALLEN, New Orleans.

15. Harelip and Cleft Palate. OWEN SMITH, Portland, Me.
Discussion to be opened by THOMAS E. CARMODY, Denver.
16. New Method of Closing an Enlarged Tooth Root Opening into the Maxillary Antrum.
CULLEN F. WELTY, San Francisco.
Discussion to be opened by JOSEPH A. STUCKY, Lexington, Ky.
17. Relative Value of Transillumination and Roentgenography in the Diagnosis of Disease of the Maxillary and Frontal Sinuses; with Description of an Orbitopalatal Route of Transilluminating the Maxillary Sinus (Lantern Demonstration).
HENRY H. BRIGGS, Asheville, N. C.
Discussion to be opened by J. WILKINSON JERVEY, Greenville, S. C.
18. Nerve Blocking for Nasal Surgery.
ROBERT G. REAVES, Greensboro, N. C.
Discussion to be opened by HENRY H. MARTIN, Savannah, Ga.

SECTION ON DISEASES OF CHILDREN

MEETS IN ELKS' HALL

OFFICERS OF SECTION

Chairman—FRITZ B. TALBOT, Boston.
Vice Chairman—JULIUS H. HESS, Chicago.
Secretary—E. C. FLEISCHNER, San Francisco.
Executive Committee—JULUIS P. SEDGWICK, Minneapolis; LAURENCE R. DEBUYS, New Orleans; FRANKLIN P. GENGENBACH, Denver.
(Stenographer—Dr. G. G. TAYLOR)

Wednesday, April 28—9 a. m.

1. Chairman's Address: The Future of Pediatrics.
FRITZ B. TALBOT, Boston.
2. The Treatment of Indigestion in Children.
JOHN LOVETT MORSE, Boston.

3. The Treatment of Indigestion in Children from Six to Twelve Years of Age.
HARRY M. MCCLANAHAN, Omaha.
4. The Relation of Acquired Food Dislikes of Childhood to the Diseases of Middle Life.
C. HILTON RICE, JR., Montgomery, Ala.
5. A Few Pertinent Questions on Maternal Feeding.
WILLIAM A. MULHERIN, Augusta, Ga.
6. How Pediatric Teaching of Nutrition May Affect the Nation's Welfare.
HENRY DWIGHT CHAPIN, New York.
7. Vegetable Fats in Infant Feeding.
GEORGE DOW SCOTT, New York.

Thursday, April 29—9 a. m.

8. Observations on Tumors of the Kidney in Children.
WILLIAM E. CARTER and LANGLEY PORTER, San Francisco.
9. Chronic Nephritis in Children.
LEWIS WEBB HILL, Boston.
10. Local Anesthesia in Surgery in Infancy and Childhood.
ROBERT E. FARR, Minneapolis.
11. Infantile Spinal Progressive Muscular Atrophy (Werdnig-Hoffmann). EDGAR J. HUENEKENS, Minneapolis.
12. Human Heart with only Two Chambers (Cor Biloculare).
HARRY H. DONNALLY, Washington, D. C.
13. Acrodynia. WILLIAM WESTON, Columbia, S. C.

Friday, April 30—9 a. m.

Election of Officers

14. The Temporary Teeth: Disorders Due to Their Neglect.
J. ROSS SNYDER, Birmingham, Ala.
15. The Coagulation Time of Blood in the New-Born with Special Reference to Cerebral Hemorrhage.
FREDERICK C. RODDA, Minneapolis.
16. Studies of the Effect of Diphtheria Toxin on the Heart.
HUGH MCCULLOCH, St. Louis.
17. The Antiscorbutic Value of Proprietary Baby Foods.
JOSIAH J. MOORE, Chicago.
18. Intramuscular Injections of Blood as an Aid to Nutrition.
THOMAS D. PARKE, Birmingham, Ala.
19. Intubation of the Larynx: Analysis of 440 Cases in Private Practice
HENRY J. CARTIN, Johnstown, Pa.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN GRUNEWALD, GREEN ROOM

OFFICERS OF SECTION

Chairman—GEORGE W. MCCOY, Washington, D. C.
Vice Chairman—LEONARD G. ROWNTREE, Minneapolis.
Secretary—CARY EGGLESTON, New York.
Executive Committee—A. W. HEWLETT, San Francisco; ARTHUR D. HIRSCHFELDER, Minneapolis; W. A. BASTEDO, New York.
(Stenographer—Miss MARGARET I. MALONEY, Chicago)

Wednesday, April 28—9 a. m.

1. Chairman's Address.
GEORGE W. MCCOY, Washington, D. C.
2. The Actions of Some Homologues of Benzyl Alcohol.
ARTHUR D. HIRSCHFELDER, Minneapolis.
3. Some Observations on the Pharmacology of a Digitalis Body. ROBERT A. HATCHER, New York.
4. Clinical Observations on the Absorption of Digitalis.
CARY EGGLESTON, New York.
5. Cancer Ameliorations and Cancer Immunity.
ARTHUR F. HOLDING, Madison, Wis.
6. The Treatment of Combined Diabetes and Nephritis.
FREDERICK M. ALLEN, J. W. MITCHELL and J. W. SHERRILL, New York.
7. Deficiencies in Our Methods of Treatment of Chronic Nephritis. HENRY A. CHRISTIAN, Boston.
Discussion to be opened by LEWELLYS F. BARKER, Baltimore, and GEORGE DOCK, St. Louis.

Thursday, April 29—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY

Meeting Place—Hutchinson Memorial Building, Lower Amphitheater

OLIVER S. ORMSBY, Chairman of Section on Dermatology, Presiding.

CARY EGGLESTON, Secretary of Section on Pharmacology and Therapeutics, Officiating.

SYMPOSIUM ON ARSPHENAMIN

8. The Chemical Composition of Arsphenamin and Neo-Arsphenamin and Its Relation to Toxicity (Lantern Demonstration).
GEORGE W. RAIZISS, Philadelphia.
9. The Pathology of Arsphenamin and Neo-Arsphenamin Intoxication: An Experimental Study (Lantern Demonstration).
JOHN A. KOLMER and BALDUIN LUCKE, Philadelphia.
10. Some Salient Facts Regarding the Toxicity of Arsphenamin and Neo-Arsphenamin.
GEORGE B. ROTH, Washington, D. C.
11. A Comparison of the Merits of Arsphenamin and Neo-Arsphenamin: Laboratory and Clinical Studies (Lantern Demonstration).
JAY F. SCHAMBERG, Philadelphia.
12. Therapeutic Applications and Limitations of the Arsphenamins. JOHN H. STOKES, Rochester, Minn.
13. Effects of Arsphenamin on Renal Function in Syphilitic Patients. JOSEPH A. ELLIOTT, Charlotte, N. C.
14. The Use of Arsphenamin in Nonsyphilitic Diseases.
HENRY J. NICHOLS and MATHEW A. REASONER, Washington, D. C.
Discussion of papers 8, 9, 10, 11, 12, 13 and 14 to be opened by WILLIAM A. PUSEY, Chicago, and WILLIAM H. GUY, Pittsburgh.

Friday, April 30—9 a. m.

Election of Officers

15. The Underlying Pathology of Arthritis and Rheumatoid Conditions as a Basis of Treatment.
RALPH PEMBERTON, Philadelphia.
16. Factors Affecting the Basal Metabolic Rate (Lantern Demonstration).
LEONARD G. ROWNTREE, ALBERT M. SNELL and FRANCES FORD, Minneapolis.
17. Clinical Observations on the Digitalis-Like Action of Squills. PAUL D. WHITE, Boston.
18. The Management of the Circulation in Pneumonia.
HARLOW BROOKS and JOHN H. CARROLL, New York.
Discussion to be opened by JOSEPH A. CAPPS, Chicago.
19. Quantitative Studies in Chemotherapy (Lantern Demonstration).
CARL VOEGTLIN and HOMER W. SMITH, Washington, D. C.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN GRUNEWALD—GREEN ROOM

OFFICERS OF SECTION

Chairman—HOWARD T. KARSNER, Cleveland.
Secretary—JOSIAH J. MOORE, Chicago.
Executive Committee—JAMES EWING, New York; LOUIS B. WILSON, Rochester, Minn.; FRANCIS CARTER WOOD, New York.
(Stenographer—Miss MARGARET I. MALONEY, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address: Teaching the Pathology of Function.
HOWARD T. KARSNER, Cleveland.
2. Increasing the Pathologist's Usefulness and Rewards.
BENJAMIN TAYLOR TERRY. Nashville, Tenn.
Discussion to be opened by JAMES EWING, New York; FRANCIS CARTER WOOD, New York, and WILLIAM C. MACCARTY, Rochester, Minn.
3. Experimental Pellagra in White Male Convicts.
JOSEPH GOLDBERGER and GEORGE A. WHEELER, Washington, D. C.
4. Review of the Recent Reports on Pellagra.
JAMES W. BABCOCK, Columbia, S. C.
5. The Pathology of Pellagra.
MARVIN L. GRAVES, Galveston, Texas.
Discussion of papers 3, 4 and 5 to be opened by MARTIN F. ENGMAN, St. Louis, and MARCUS HAASE, Memphis, Tenn.

6. Recent Advances in Clinical Blood Pressure Measurement.
CLYDE BROOKS and ALBERT M. BLEILE, Columbus, Ohio.
7. An Experimental Study of Acidosis Produced by Ether Anesthesia. WILLIAM S. CARTER, Galveston, Texas.

Thursday, April 29—2 p. m.

8. The Development of the Bactericidal Power of Whole Blood and of Antibodies in the Serum.
JAMES H. BLACK, Dallas, Texas.
9. Some Characteristics of Certain Epidemic Micro-Organisms. DAVID J. DAVIS, Chicago.
10. The Toxic Substances Produced by Hemolytic Streptococci. LUDVIG HEKTOEN, Chicago.
11. Penetration of the Intestine and Formation of Abdominal Abscess by Entameba Histolytica.
KENNETH M. LYNCH, Charleston, S. C.
12. Localization of Malarial Parasites in the Tissues.
CHARLES C. BASS, New Orleans.
13. A Mathematical Terminology for Neoplasia.
WILLIAM C. MACCARTY, Rochester, Minn.
14. Chronic Nephritis with Special Reference to the Interstitial Form. LOUIS A. TURLEY, Norman, Okla.

Friday, April 30—2 p. m.

Election of Officers

15. Bacterial Vaccines: Their Uses and Abuses.
ADELBERT M. MOODY, Chicago.
16. The Wassermann Reaction: Prolonged Incubation in the Icebox Versus a Short Period over the Water Bath.
WARD T. BURDICK, Denver.
17. The Value of the Postmortem Wassermann Reaction.
F. STUART GRAVES, Louisville, Ky.
Discussion to be opened by EDWIN R. LECOUNT, Chicago.
18. Observations on the Quantitative Nature of Complement Fixation. JOHN J. SEELMAN, Milwaukee.
Discussion to be opened by JOHN A. KOLMER, Philadelphia.
19. The Complement Fixation Reaction in Tuberculosis.
W. WARNER WATKINS and CLARENCE N. BOYNTON, Phoenix, Ariz.
20. Transplantation of the Kidney and Ovary.
I. CARLETON DEDERER, Bay City, Mich.
21. Inhalations of Carbon Dioxid in Combating Postoperative Shock.
YANDELL HENDERSON and HOWARD W. HAGGARD, New Haven, Conn., and RAYMOND C. COBURN, New York.

SECTION ON STOMATOLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING, FACULTY ROOM

OFFICERS OF SECTION

Chairman—VILRAY P. BLAIR, St. Louis.
Vice Chairman—HENRY S. DUNNING, New York.
Secretary—ARTHUR D. BLACK, Chicago.
Executive Committee—ARTHUR D. BLACK, Chicago; FREDERICK B. NOYES, Chicago; EUGENE S. TALBOT, Chicago.
(Stenographer—Mr. ARTHUR J. CHAPMAN, New Orleans)

Wednesday, April 28—2 p. m.

1. Chairman's Address. VILRAY P. BLAIR, St. Louis.
Discussion to be opened by G. V. I. BROWN, Milwaukee.
2. Emergency Splinting of Jaw Fractures: Intra-Oral Appliances. LEO B. WINTER, New York.
3 Emergency Splinting of Jaw Fractures: Extra-Oral Appliances.
WILLIAM C. SPEAKMAN, Wilmington, Del.
4. Treatment of Fractures of the Angle and Ramus.
J. D. EBY, Philadelphia.
5. Gradual Reduction of Fractures of the Maxilla and Mandible. A. L. MILLER, Fort McHenry, Md.
6. Treatment of Comminuted Fractures of the Mandible.
HERBERT A. POTTS, Chicago.
Discussion of papers 2, 3, 4, 5 and 6 to be opened by THOMAS L. GILMER, Chicago.

Thursday, April 29—2 p. m.

7. Epithelial Inlays versus Skin or Mucous Membrane Flaps for Replacing Lost Mucous Membrane in the Mouth.
GEORGE M. DORRANCE, Philadelphia.
8. Plastic Repair of Soft Tissue Injuries of the Face.
J. D. WHITHAM, Washington, D. C.
9. Final Report of War Cases of Comminuted Open Fractures of the Jaws and Those with Loss of Substance: Results of Bone Graft. ROBERT H. IVY, Philadelphia.
Discussion to be opened by M. I. SCHAMBERG, New York.
10. Adenoma of the Mucous Glands of the Mouth and Macrocheilia. EDWARD H. HATTON, Chicago.
Discussion to be opened by FREDERICK B. MOOREHEAD, Chicago.
11. Surgical Treatment of Maxillary Sinusitis of Dental Origin. HENRY S. DUNNING, New York.
Discussion to be opened by HERBERT A. POTTS, Chicago.

Friday, April 30—2 p. m.

Election of Officers

12. Progress in Dental Education.
H. E. FRIESELL, Pittsburgh.
Discussion to be opened by EUGENE S. TALBOT, Chicago.
13. Dental Care of Children in Our Hospitals.
HAIDEE WEEKS GUTHRIE, New Orleans.
14. Training Public Schoolchildren in Mouth Hygiene.
A. C. FONES, Bridgeport, Conn.
15. Public Education in Mouth Hygiene.
OTTO U. KING, Chicago.
Discussion of papers 13, 14 and 15 to be opened by ARTHUR D. BLACK, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN CHARITY HOSPITAL, AMPHITHEATER

OFFICERS OF SECTION

Chairman—ELMER E. SOUTHARD,* Boston.
*Deceased.
Vice Chairman—ARTHUR S. HAMILTON, Minneapolis.
Secretary—CHARLES W. HITCHCOCK, Detroit.
Executive Committee—BERNARD SACHS, New York; CHARLES EUGENE RIGGS, St. Paul; ARCHIBALD CHURCH, Chicago.
(Stenographer—Miss ADELAIDE FOLSOM, Ripon, Wis.)

Wednesday, April 28—9 a. m.

1. Chairman's Address.
ARTHUR S. HAMILTON, Minneapolis.
2. Reduction of Nervous Irritability and Excitement by Progressive Relaxation.
EDMUND JACOBSON, Chicago.
3. Influenza and Feeblemindedness.
KARL A. MENNINGER, Topeka, Kan.
4. Conjugal Syphilis of the Nervous System.
ALFRED GORDON, Philadelphia.
5. Discussion of Therapeutic Agents in Chronic Nervous Diseases. WILLIAM A. JONES, Minneapolis.
6. Congenital Facial Paralysis: Two Additional Cases.
FRANK R. FRY, St. Louis.
7. The Causes of Emotivity and Their Management.
TOM A. WILLIAMS, Washington, D. C.

Thursday, April 29—9 a. m.

8. A Theory of the Neuroses as Instinctive Reactions.
SIDNEY I. SCHWAB, St. Louis.
9. Prognosis of Traumatic Neurosis.
LOUIS A. MILLER, Toledo, Ohio.
10. Experiences with Luminal in Epilepsy.
JULIUS GRINKER, Chicago.
11. The Paraplegic Type of Multiple Sclerosis.
ARCHIBALD CHURCH, Chicago.
12. Endocrine Imbalance in the Feebleminded.
OSCAR J. RAEDER, Boston.
13. The Amnesias in Head Injuries.
HAROLD N. MOYER, Chicago.
14. The Physiologic Significance of the Babinski Toe Response. I. LEON MEYERS, Chicago.

Friday, April 30—9 a. m.

Election of Officers

15. Nervous and Mental Diseases: A Challenge to the Medical Profession.
FRANKWOOD E. WILLIAMS, New York.

16. Symptomatology of Spinal Cord Tumors with Illustrative Cases.
I. ABRAHAMSON and H. CLIMENKO, New York.
17. The Physician and the Neuropath.
CHARLES R. BALL, St. Paul.
18. Outline of a Scheme for Writing the Natural History of Syphilis. SANGER BROWN, Chicago.
19. Measles: Brain Complications.
A. L. SKOOG, Kansas City, Mo.
20. The Relation of Worms to Epilepsy.
E. BATES BLOCK, Atlanta, Ga.
21. Encephalitis Lethargica.
EDWARD LIVINGSTON HUNT, New York.

SECTION ON DERMATOLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING, LOWER AMPHITHEATER

OFFICERS OF SECTION

Chairman—OLIVER S. ORMSBY, Chicago.
Vice Chairman—JOHN E. LANE, New Haven, Conn.
Secretary—WALTER J. HIGHMAN, New York.
Executive Committee—HENRY R. VARNEY, Detroit; HENRY H. HAZEN, Washington, D. C.; OTTO H. FOERSTER, Milwaukee.
(Stenographer—Mrs. IRENE H. SNYDER, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address: A Valuable Method of Employing Arsphenamin in Syphilis.
OLIVER S. ORMSBY, Chicago.

SYMPOSIUM ON SYPHILIS

2. Polyneuritis Plus Dermatitis Exfoliativa Following Neo-Arsphenamin. B. BARKER BEESON, Chicago.
3. Arsphenamin Dermatitis.
GEORGE M. OLSON, Minneapolis.
4. A Study of the Absorption of Mercury Injections by Means of the Roentgen Ray.
HAROLD N. COLE, Cleveland.
5. The Value of the Provocative Wassermann Test in the Diagnosis of Obscure Syphilis.
PAUL A. O'LEARY, Rochester, Minn.
6. Protein Sensitization in Eczema.
HOWARD FOX, New York, and J. EDGAR FISHER, Pittsburgh.
7. Infectious Eczematoid Dermatitis.
RICHARD L. SUTTON, Kansas City, Mo.
8. Eczema of the Vermilion Border of the Lips.
DOUGLASS W. MONTGOMERY and GEORGE D. CULVER, San Francisco.
9. Venipuncture as an Occasional Adjuvant in the Treatment of Certain Diseases of the Skin.
JEROME KINGSBURY and PAUL E. BECHET, New York.

Thursday, April 29—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY

SYMPOSIUM ON ARSPHENAMIN

For Program See Page 855

Friday, April 30—2 p. m.

Election of Officers

SYMPOSIUM ON NEW GROWTHS

17. A Clinical Study of Epitheliomas of the Lower Lip (Lantern Demonstration).
EVERETT S. LAIN, Oklahoma City.
18. Malignant Degeneration of Benign Dermatoses.
CHARLES M. WILLIAMS, New York.
19. Malignant Tumors of the Skin.
EARL D. CRUTCHFIELD, Galveston, Texas.
20. On Production of Tumors in the Absence of Parasites.
ERWIN F. SMITH, Washington, D. C.
21. The Treatment of Keloid and Hypertrophied Scars by Radiotherapy Alone or Combined with Excision.
GEORGE E. PFAHLER, Philadelphia.
Discussion of papers 17, 18, 19, 20 and 21 to be opened by NORMAN WALKER, Edinburgh.
22. Acidosis in Skin Diseases.
SAMUEL E. SWEITZER and HENRY E. MICHELSON, Minneapolis.
23. Lichen Spinulosus and Folliculitis Decalvans: A Clinical Combination. FRANCIS E. SENEAR, Chicago.
24. The Association of Herpes Zoster and Varicella.
ERNEST L. MCEWEN, Chicago.
25. The Histogenesis of Molluscum Contagiosum (Lantern Demonstration).
LYLE B. KINGERY, Ann Arbor, Mich.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN LOYOLA HALL

OFFICERS OF SECTION

Chairman—JAMES A. HAYNE, Columbia, S. C.
Vice Chairman—J. D. MACLEAN, Harrisburg, Pa.
Secretary—CLARENCE D. SELBY, Toledo, Ohio.
Executive Committee—OTTO P. GEIER, Cincinnati; W. S. RANKIN, Raleigh, N. C.; CLARENCE ST. CLAIR DRAKE, Springfield, Ill.
(Stenographer—Mrs. M. C. REPP, Philadelphia)

Wednesday, April 28—9 a. m.

1. Chairman's Address: The Rights of the Child.
JAMES A. HAYNE, Columbia, S. C.
2. What the American Red Cross Can Contribute to the General Health Program.
ERWIN A. PETERSON, Washington, D. C.
3. Mortality and Incidence of Leprosy Throughout the World. FREDERICK L. HOFFMAN, Newark, N. J.
Discussion to be opened by ISADORE DYER, New Orleans.
4. Desirable Trend of National Health Policies.
BENJAMIN S. WARREN, Washington, D. C.
5. Minimum Standards of Organization for Municipal Health Departments. CARROLL FOX, Boston.
6. Sanitation in Poland. FRANCIS E. FRONCZAK, Buffalo.
7. The Training of Industrial Physicians.
J. A. WATKINS, Cincinnati.
Discussion to be opened by OTTO P. GEIER, Cincinnati.

Thursday, April 29—9 a. m.

8. The Carrier Question in Epidemic Meningitis and Diphtheria. CHARLES M. ABBOTT, Alexandria, La.
9. Typhoid Reduction in South Carolina: Results in Counties with Health Organization.
LUTHER A. RISER, Columbia, S. C.
Discussion to be opened by KNOX E. MILLER, Raleigh, N. C.
10. Heart Disease as a Public Health Problem.
LEWIS A. CONNER, New York.
Discussion to be opened by ALEXANDER LAMBERT, New York.
11. Eradication of Malaria: A National Health Problem.
LUNSFORD D. FRICKS, Memphis, Tenn.
12. Trachoma: A Public Health Problem of the States (Lantern Demonstration). JOHN MCMULLEN, Louisville, Ky.
Discussion to be opened by ARTHUR T. MCCORMACK, Louisville, Ky., and ALLEN W. FREEMAN, Columbus, Ohio.
13. Industrial Epidemiology.
W. A. SAWYER, Rochester, N. Y.

Friday, April 30—9 a. m.

Election of Officers

14. The Work of the Department of Health of the Tennessee Coal, Iron and Railroad Company.
LLOYD NOLAND, Birmingham, Ala.
Discussion to be opened by CLYDE E. FORD, New York.
15. The Difficulties of Public Health Administration.
GROVER C. MCKINNEY, Lake Charles, La.
16. An Ambulatory Clinic.
RALPH N. GREENE, Jacksonville, Fla.
17. Lessons Taught by Measures for Control of Venereal Diseases and Suggestions for the Future.
CLAUDE C. PIERCE, Washington, D. C.
18. The Necessity for the Reporting of Venereal Disease by Physicians. WILLIAM EDLER, New Orleans.
Discussion to be opened by OSCAR DOWLING, New Orleans.
19. The Differential Diagnosis of Conjunctival Folliculosis and Trachoma.
J. WILKINSON JERVEY, Greenville, S. C.
Discussion to be opened by HENRY DICKSON BRUNS, New Orleans, and THEODORE OERTEL, Augusta, Ga.

SECTION ON UROLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING, LOWER AMPHITHEATER

OFFICERS OF SECTION

Chairman—WILLIAM E. LOWER, Cleveland.

Vice Chairman—RICHARD F. O'NEIL, Boston.

Secretary—E. O. SMITH, Chicago.

Executive Committee—HUGH CABOT, Ann Arbor, Mich.; EDWARD L. KEYES, JR., New York; WILLIAM F. BRAASCH, Rochester, Minn.

(Stenographer—Mrs. IRENE H. SNYDER, Chicago)

Wednesday, April 28—9 a. m.

1. Chairman's Address: Disposition of the Ureter in Surgical Conditions of the Bladder Involving the Ureteral Orifices. WILLIAM E. LOWER, Cleveland.
2. Results of Surgical Treatment of Tumors of the Bladder. E. STARR JUDD and WALTER E. SISTRUNK, Rochester, Minn.
3. Radium Treatment of Bladder Carcinoma. BENJAMIN S. BARRINGER, New York.
4. Bladder Tumors: Pathology and Radiumtherapy. JOHN T. GERAGHTY, Baltimore.
5. The Treatment of Bladder Tumors with Analysis of Cases. BENJAMIN A. THOMAS, Philadelphia.
   Discussion of papers 2, 3, 4 and 5 to be opened by LOUIS E. SCHMIDT, Chicago, EDWARD L. KEYES, New York, and HUGH CABOT, Ann Arbor, Mich.
6. Papillomatous Epithelioma of Kidney Pelvis. PERCY E. MCCOWN, Indianapolis.
   Discussion to be opened by E. STARR JUDD, Rochester, Minn., and WILLIAM E. LOWER, Cleveland.

Thursday, April 29—9 a. m.

7. Abdominal Pain in Diseases of the Kidney and Ureters. ARTHUR B. CECIL, Los Angeles.
   Discussion to be opened by ALFRED I. FOLSOM, Dallas, Texas.
8. Studies of Pyelitis in Infancy. HERMAN L. KRETSCHMER, Chicago.
   Discussion to be opened by WILLIAM C. QUINBY, Boston, and WILLIAM F. BRAASCH, Rochester, Minn.
9. Nephrectomy: Based on the Record of 250 Cases. ABRAHAM HYMAN and EDWIN BEER, New York.
   Discussion to be opened by ALEXANDER RANDALL, Philadelphia.
10. Ureteral Obstruction and Dilatation in the Male. ALBERT E. GOLDSTEIN, Baltimore.
    Discussion to be opened by BRANSFORD LEWIS, St. Louis, and JOHN G. KELLER, Toledo, Ohio.
11. Occluded Renal Tuberculosis (Lantern Demonstration). WILLIAM F. BRAASCH, Rochester, Minn.
    Discussion to be opened by JOSEPH HUME, New Orleans.
12. Developmental Factors in the Formation of Certain Vesical Diverticula (Lantern Demonstration). ERNEST M. WATSON, Buffalo.
    Discussion to be opened by OSWALD S. LOWSLEY, New York.
13. Diverticulum of the Bladder (Lantern Demonstration). FRANCIS M. MCCALLUM, Kansas City, Mo.
    Discussion to be opened by COURTNEY W. SHROPSHIRE, Birmingham, Ala.

Friday, April 30—9 a. m.

Election of Officers

14. Contraindications to Prostatectomy (Lantern Demonstration). JAMES A. GARDNER, Buffalo.
    Discussion to be opened by HUGH H. YOUNG, Baltimore.
15. Ulcer of the Bladder—Hunner Type. HARRY A. FOWLER, Washington, D. C.
    Discussion to be opened by GUY L. HUNNER, Baltimore.
16. Bladder Findings in Central Nervous System Diseases. JOHN R. CAULK, St. Louis.
    Discussion to be opened by BUDD C. CORBUS, Chicago, and HARRY W. PLAGGEMEYER, Detroit.
17. Urological and Venereal Idiosyncrasies in the Negro. GEORGE H. DAY, Louisville.
    Discussion to be opened by CARL L. WHEELER, Lexington, Ky.
18. Gonorrhea of the Lower Genito-Urinary Tract in Women, with Special Reference to the Glands of Bartholin. WILLIAM E. STEVENS and MAURICE HEPPNER, San Francisco.
    Discussion to be opened by GEORGE G. SMITH, Boston, and RUFUS L. RIGDON, San Francisco.
19. Orchitis from Mumps: Conservation of the Testes by Incision of the Tunica Albuginea. EDGAR G. BALLENGER, Atlanta, Ga.
    Discussion to be opened by FRANCIS R. HAGNER, Washington, D. C.
20. Spermatogenesis in Relation to Childlessness (Lantern Demonstration). VICTOR D. LESPINASSE, Chicago.
    Discussion to be opened by MAX HUHNER, New York.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN CHARITY HOSPITAL, AMPHITHEATER

OFFICERS OF SECTION

Chairman—GEORGE W. HAWLEY, New York.

Vice Chairman—ROLAND HAMMOND, Providence, R. I.

Secretary—HENRY BASCOM THOMAS, Chicago.

Executive Committee—EDWIN W. RYERSON, Chicago; ALBERT H. FREIBERG, Cincinnati; EMIL S. GEIST, Minneapolis.

(Stenographer—Miss ADELAIDE FOLSOM, Ripon, Wis.)

Wednesday, April 28—2 p. m.

1. Orthopedic Conditions Directly Due to Sterilized Food in Infancy (Lantern Demonstration). FRANK E. PECKHAM, Providence, R. I.
   Discussion to be opened by MAURICE L. BLATT, Chicago, and EDWARD S. HATCH, New Orleans.
2. Operations for Repair of Bone Defects: Results Obtained at Letterman General Hospital (Lantern Demonstration). LEO ELOESSER, San Francisco.
   Discussion to be opened by J. PAUL JONES, Camden, Ala.
3. Results of Bone Graft at U. S. Army Hospital No. 3 (Lantern Demonstration). JOHN SPENCER DAVIS, Dallas, Texas, and JACOB J. SYBENGA, Pella, Iowa.
   Discussion to be opened by PAUL B. MAGNUSON, Chicago, and ERASMUS D. FENNER, New Orleans.

SYMPOSIUM ON TREATMENT OF INFANTILE PARALYSIS

4. Transverse Horizontal Section of the Tarsus in Paralytic Calcaneus and Flail Foot (Lantern Demonstration). DEFOREST P. WILLARD, Philadelphia.
5. Operative Treatment of Infantile Paralysis. ROBERT W. LOVETT, Boston.
6. Indications for and End-Results of Surgical Operations in Infantile Paralysis (Lantern Demonstration). H. WINNETT ORR, Lincoln, Neb.
7. Sling Suspension Method of Exercises in Infantile Paralysis (Lantern Demonstration). FREDERICK J. GAENSLEN, Milwaukee.
   Discussion of papers 4, 5, 6 and 7 to be opened by JOHN D. RIDLON, Chicago; FRANK D. DICKSON, Kansas City, Mo.; JAMES O. WALLACE, Pittsburgh; WILLIS K. WEST, Oklahoma City; ARTHUR STEINDLER, Iowa City; CLARENCE W. EAST, Springfield, Ill.; PHILIP D. WILSON, Boston, and HENRY B. THOMAS, Chicago.

Thursday, April 29—2 p. m.

8. Anterior Bow-Legs. WALLACE BLANCHARD, Chicago.
   Discussion to be opened by WILLIS C. CAMPBELL, Memphis, Tenn., and H. WINNETT ORR, Lincoln, Neb.
9. Chairman's Address: Constructive Versus Reconstructive Surgery of the Extremities. ROLAND HAMMOND, Providence, R. I.
10. Some of the Difficulties in the Diagnosis of Osteosarcoma (Lantern Demonstration). ROBERT B. COFIELD, Cincinnati.
    Discussion to be opened by DEAN D. LEWIS, Chicago, and FREDERICK J. GAENSLEN, Milwaukee.
11. Dislocation of the Carpal Semilunar Bone (Lantern Demonstration). WALTER G. STERN, Cleveland.
    Discussion to be opened by SAMUEL KLEINBERG, New York, and EDWARD S. HATCH, New Orleans.

12. Recurrent Dislocations and Allied Chronic Conditions of the Shoulder. T. TURNER THOMAS, Philadelphia.
Discussion to be opened by WILLIAM J. MERRILL, Philadelphia; MELVIN S. HENDERSON, Rochester, Minn., and ALFRED C. WOOD, Philadelphia.
13. The Objective Symptoms of Foot Strain (Lantern Demonstration). ALBERT H. FREIBERG, Cincinnati.
Discussion to be opened by JOHN L. PORTER, Chicago, and JOHN CARLING, Los Angeles.
14. Unstandardized Versus Standardized Splints. HORACE R. ALLEN, Indianapolis.
Discussion to be opened by CLARENCE W. HOPKINS, Chicago.

Friday, April 30—2 p. m.

Election of Officers

15. Operative Treatment of Peripheral Nerve and Associated Bone Lesions in One Stage. JOHN O. BOWER, Philadelphia.
Discussion to be opened by WILLIAM W. BABCOCK, CHARLES H. FRAZIER, Philadelphia, and HARRY HYLAND KERR, Washington, D. C.

SYMPOSIUM ON RESTORATION OF THE DISABLED

16. Restoration of the Disabled in War as Applied to Industrial Disability. ELLIOTT G. BRACKETT, Boston.
17. Reclamation Service for Workmen Permanently Handicapped in Industry. HARRY E. MOCK, Chicago.
18. Progress in the Care of Cripples. CARROLL L. STOREY, Detroit.
Discussion of papers 16, 17 and 18 to be opened by CLARENCE ST. CLAIR DRAKE, Springfield, Ill.; ALBERT H. FREIBERG, Cincinnati; JOHN T. O'FERRALL, New Orleans, FRANK G. MURPHY, Chicago, and FREDERICK C. KIDNER, Detroit.
19. Intra-Articular Fractures. ROBERT D. SCHROCK, Omaha.
Discussion to be opened by PAUL A. MCILHENNY, New Orleans; HENRY C. MARBLE, Boston; NATHANIEL ALLISON, St. Louis, and NORMAN KERR, Chicago.
20. The Occurrence and Causes of Functional Scoliosis in College Men. WILLIAM L. ESTES, South Bethlehem, Pa.
Discussion to be opened by ROBERT W. LOVETT, Boston, and EDWIN W. RYERSON, Chicago.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN LOYOLA HALL

OFFICERS OF SECTION

Chairman—FRANK SMITHIES, Chicago.
Vice Chairman—LOUIS J. HIRSCHMAN, Detroit.
Secretary—HORACE W. SOPER, St. Louis.
Executive Committee—DWIGHT H. MURRAY, Syracuse, N. Y.; ANTHONY BASSLER, New York; WILLIAM M. BEACH, Pittsburgh.
(Stenographer—Mrs. M. C. REPP, Philadelphia)

Wednesday, April 28—2 p. m.

1. Chairman's Address: The Significance of Etiologic Factors in the Treatment of Peptic Ulcer. FRANK SMITHIES, Chicago.
2. Principles of Gastric Analysis. MARTIN E. REHFUSS, Philadelphia.
Discussion to be opened by ANTHONY BASSLER and G. A. FRIEDMAN, New York.
3. Fractional Gastric Analyses.
GEORGE REESE SATTERLEE, New York, and WALTER B. JENNINGS and HENRY A. COTTON, Trenton, N. J.
Discussion to be opened by BURRILL B. CROHN, New York; MARTIN E. REHFUSS, Philadelphia, and JOHN P. SAWYER, Cleveland.
4. The Differential Diagnosis of Amebiasis, Tuberculosis, Syphilis and Carcinoma as Manifested in the Rectum and Pelvic Colon. J. RAWSON PENNINGTON, Chicago.
Discussion to be opened by CHARLES J. DRUECK, Chicago; CHARLES E. HYNDMAN, St. Louis, and HOLLAND H. DONALDSON, Pittsburgh.
5. Hemorrhoidectomy: Composite Operation. EDWARD G. MARTIN, Detroit.
Discussion to be opened by LOUIS J. KROUSE, Cincinnati; JAMES A. DUNCAN, Toledo, Ohio, and GEORGE W. COMBS, Indianapolis.
6. Diverticula of the Small Intestines other than Meckel's Diverticulum. JAMES T. CASE, Battle Creek, Mich.
Discussion to be opened by WILLIAM J. MAYO, Rochester, Minn., and DUDLEY D. ROBERTS, New York.
7. Hypotension Headache in Relation to Constipation. ERNEST CLYDE FISHBAUGH, Los Angeles.
Discussion to be opened by ALBERT BERNHEIM, Philadelphia; JOHN D. DUNHAM, Columbus, Ohio, and ELSWORTH S. SMITH, St. Louis.

Thursday, April 29—2 p. m.

8. Further Studies on Gastric and Duodenal Ulcer. A. C. IVY, Chicago.
Discussion to be opened by CHARLES H. NEILSON, St. Louis, and WALTER C. ALVAREZ, San Francisco.
9. Gastrojejunal Ulcer: Clinical Study of Eighty-Four Cases. GEORGE B. EUSTERMAN, Rochester, Minn.
Discussion to be opened by JULIUS FRIEDENWALD, Baltimore; CHARLES H. MAYO, Rochester, Minn., and WILLARD BARTLETT, St. Louis.
10. Critical Review of 500 Cases of Gastric and Duodenal Ulcer. ELMER L. EGGLESTON, Battle Creek, Mich.
Discussion to be opened by JAMES TAFT PILCHER, Brooklyn, and SIDNEY K. SIMON, New Orleans.
11. Specialization in the Medical and Surgical Treatment of Ulcer of the Stomach and Duodenum. ANGELO L. SORESI, New York.
Discussion to be opened by CHARLES D. AARON, Detroit, and E. STARR JUDD, Rochester, Minn.
12. Insufficiency of the Cardia. JOSEPH SAILER, Philadelphia.
Discussion to be opened by HARRY G. WALCOTT, Dallas, Texas; EDWARD H. SKINNER, Kansas City, Mo., and SEALE HARRIS, Birmingham, Ala.
13. Rectocolonic Therapy. ALFRED J. ZOBEL, San Francisco.
Discussion to be opened by LOUIS J. HIRSCHMAN, Detroit; WILLIAM M. BEACH, Pittsburgh; DWIGHT H. MURRAY, Syracuse, N. Y., and J. RAWSON PENNINGTON, Chicago.
14. The Evidence in Favor of Water Drinking with Meals. ELBRIDGE G. CUTLER, Boston.
Discussion to be opened by JOHN M. BELL, St. Joseph, Mo.; ERNEST ZUEBLIN, Cincinnati, and JOHN W. BELL, Minneapolis.

Friday, April 30—2 p. m.

Election of Officers

15. Mucous Colitis. WILLIAM H. STAUFFER, St. Louis.
Discussion to be opened by J. DAWSON REEDER, Baltimore; JOHN M. FRICK, Toledo, Ohio, and J. COLES BRICK, Philadelphia.
16. Modification of Intestinal Flora. J. RUSSELL VERBRYCKE, JR., Washington, D. C.
Discussion to be opened by WILLIAM GERRY MORGAN, Washington, D. C., and ANTHONY BASSLER, New York.
17. Arthritic Changes in the Spine and Their Relation to the Roentgenologic Study of the Gastro-Intestinal Tract. WILLIAM S. NEWCOMET, Philadelphia.
Discussion to be opened by SHERWOOD MOORE, St. Louis; JAMES T. CASE, Battle Creek, Mich., and JOHN BRYANT, Boston.
18. What Is Being Done for the Insane by Means of Surgery. JOHN W. DRAPER, New York.
Discussion to be opened by HENRY A. COTTON, Trenton, N. J., and JEROME M. LYNCH, New York.
19. The Roentgenology of the Appendix: The Significance of the Opaque Filling in Chronic Appendicitis. EDWARD H. SKINNER, Kansas City, Mo.
Discussion to be opened by R. WALTER MILLS, St. Louis; GEORGE E. PFAHLER, Philadelphia, and MARSH PITZMAN, St. Louis.
20. Visualization of the Duodenum by Means of the Duodenal Tube. ISRAEL D. PALEFSKI, New York.
Discussion to be opened by MAX EINHORN, New York, and CLEMENT R. JONES, Pittsburgh.
21. The Treatment of the Chronic Intestinal Invalid. JOHN BRYANT, Boston.
Discussion to be opened by JEROME M. LYNCH and JOHN W. DRAPER, New York, and J. C. JOHNSON, Atlanta, Ga.
22. Diaphragmatic Hernia Diagnosed During Life. M. MILTON PORTIS and SIDNEY A. PORTIS, Chicago.
Discussion to be opened by GEORGE E. PFAHLER, Philadelphia, and LEWIS GREGORY COLE and SEYMOUR BASCH, New York.

THE EXHIBITS—*ALLONS!*

"Allons," said Dr. Voolayvoo, as the discussion of the last paper of the first morning dwindled to a close, "let us depart quickly from here."

"Why the haste?" I asked.

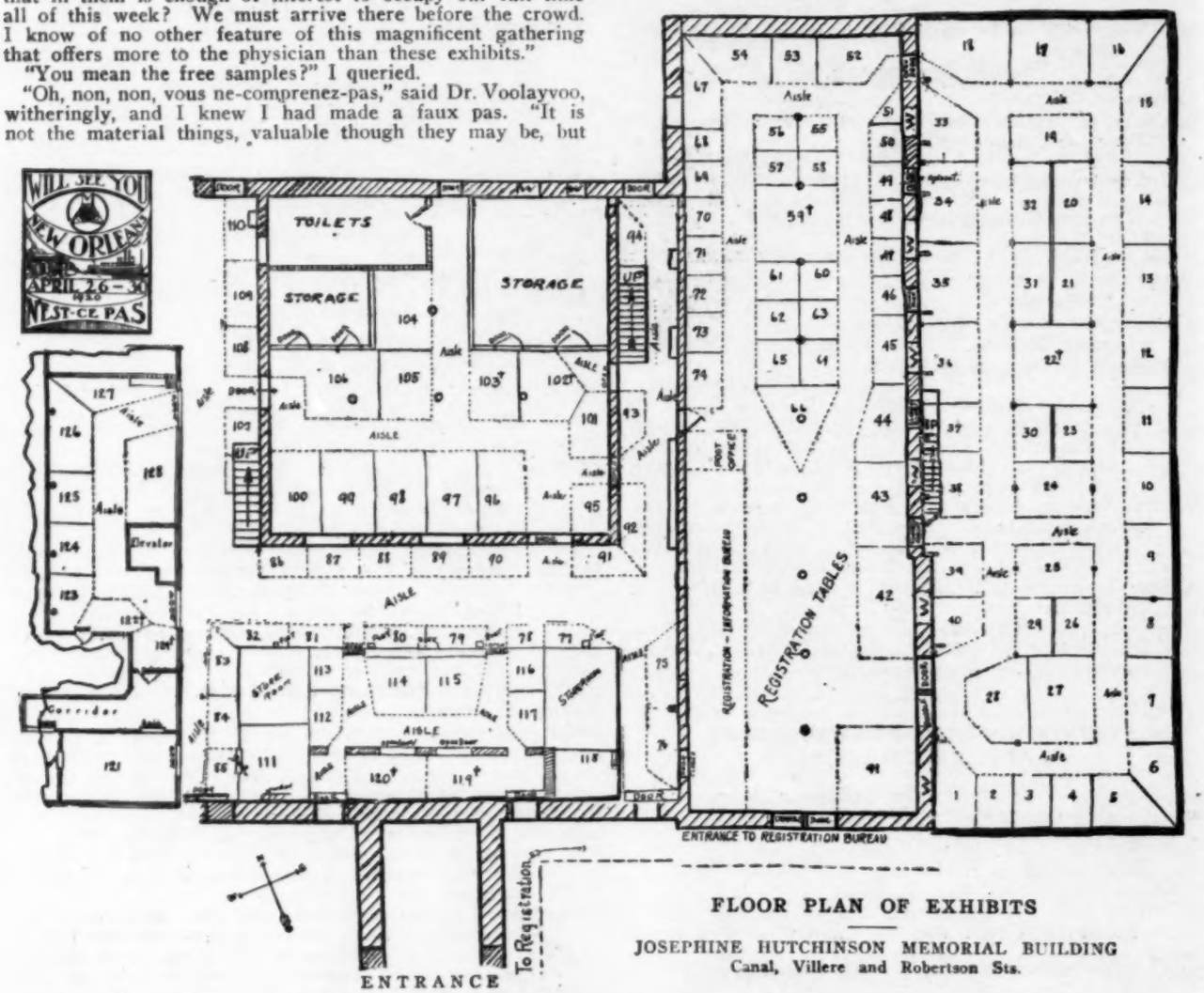
"The exhibits, the exhibits, my friend. Do you not know that in them is enough of interest to occupy our full time all of this week? We must arrive there before the crowd. I know of no other feature of this magnificent gathering that offers more to the physician than these exhibits."

"You mean the free samples?" I queried.

"Oh, non, non, vous ne-comprenez-pas," said Dr. Voolayvoo, witheringly, and I knew I had made a faux pas. "It is not the material things, valuable though they may be, but rather the new ideas one finds at these commercial exhibits that make them of value."

"But, I really don't want to buy anything," said I weakly.

"Ma foi, that is not necessary," answered Voolayvoo. "Perhaps you have been wrongly impressed by that word



FLOOR PLAN OF EXHIBITS

JOSEPHINE HUTCHINSON MEMORIAL BUILDING
Canal, Villere and Robertson Sts.

List of Exhibitors

	Space No.
Abbott Laboratories, The, Chicago, Hospital tent	
Allison Co., W. D.	85-111
Aloe Co., A. S.	68-69-70-71
American Surgical Specialty Co., Chicago	33
Anatomik Footwear Co., New York	99
Appleton & Co., D., New York	91-92
Armour & Co., Chicago	7
B. B. Culture Laboratory, Yonkers, N. Y.	2
Bard-Parker Co., New York	25
Baum Co., Inc., Wm. A., New York	95
Bausch & Lomb Optic. Co., Rochester, N. Y.	6
Becton-Dickinson Co., Rutherford, N. J.	20
Berger Bros. Co., New Haven, Conn.	23-30
Betz Co., Frank S., Hammond, Ind.	19-31-32
Blakiston's Son & Co., P., Philadelphia	43
Boehm Surgical Inst. Co., Rochester, N. Y.	127
Brady & Co., Geo. W., Chicago	8
Buzzell Flanders Co., Boston	112-113
Caloo Chemical Co., The, New York	114
Campbell Electric Co., Lynn, Mass.	121
Chicago Medical Book Co., Chicago	45
Crain Publishing Co., Chicago	86
Cummings Chem. Co., W. L., Lansdowne, Pa.	77
Davis Co., F. A., Philadelphia	9
Dennison Mfg. Co., Framingham, Mass.	5
Dennos Products Co., Chicago	75
DeVilbiss Mfg. Co., The, Toledo	44
Dry Milk Co., The, New York	76
Earnshaw Knitting Co., Chicago	53
Eastman Kodak Co., Rochester, N. Y.	10-11
Everhart, Laurence, Atlanta	107
Fisch[illegible] & Co., H. G., Chicago	14
Foregger Co., The, New York	119
Fraas, Aug. E., New York	81
General Electric Co., Schenectady	106
Hanovia Chem. Co., Newark, N. J.	22
Hardy & Co., F. A., Chicago	59
Heyden Chem. Wks., New York	47
Hoeber, Paul B., New York	3
Hollister-Wilson Lab., Chicago	4
Horlick's Malted Milk Co., Racine, Wis.	39-40
Hynson, Westcott & Dunning, Baltimore	37-38
Jaeckh Mfg. Co., Cincinnati, Ohio	89
Johnson & Co., Mead, Evansville, Ind.	105
Kelley-Koett Co., Covington, Ky.	12-13
Kny-Scheerer Co., New York	128
Leitz, E. Inc., New York	100
Linen Underwear Co., Greenwich, Conn.	108
Lippincott Co., J. B., Philadelphia	41
Lungmotor Co., Boston	79-80
Lyons & Co., I. L., New Orleans	109
Maltbie Chemical Co., Newark, N. J.	50-51
Marshalltown Lab., Marshalltown, Ia.	82
McDermott S. Ins. Co., N. Orleans	124-125-126
Mellin's Food Co., Boston	55-56-57-58
Metz Laboratories, H. A., New York	18
Meyrowitz, Inc., E. B., New York	16-17
Mosby Co., C. V., St. Louis	72-73-74
Mueller & Co., V., Chicago	60-61-62-63
Nelson & Son, Thos., New York	96-97
Oxford University Press, New York	64-65-66
Patterson Screen Co., Towanda, Pa.	21
Pulvola Chemical Co., Jersey City, N. J.	90
Radio Chem. Corp., New York	122-123
Radium Chemical Co., Pittsburgh	54-67
Radium Co. of Colorado, The, Denver	26-29
R. & E. Mfg. Co., The Cleveland	78
Safety Anesthesia App. Concern, Chicago	115
Sanborn Co., Boston	93
Saunders Co., W. B., Philadelphia	42
Scientific App. Co., N. Y.	101
Sealy Mattress Co., Sugarland, Tex.	118
Sorensen Co., Inc., C. M., New York	102-103
Southworth Co., The, Troy, N. Y.	84
Squibb & Sons, E. R., New York	27-28
Takamine Laboratories, Inc., New York	98
Taylor Instr. Cos., Rochester, N. Y.	24
Thompson-Plaster Co., Leesburg, Va.	15
Thoro Corporaton, The, Chicago	104
Toledo Technical App. Co., Toledo	116-117
Victor Electric Corporation, Chicago	34-35-36
Waterproof Fabric Co., Chicago	88
Weder Mfg. Co., Philadelphia	46
Welch Grape Juice Co., The, Westfield N.Y.	52
Wilson & Wilson, Boston	83
Wood & Co., Wm., New York	48-49
Year Book Publishers, Chicago	87

'commercial.' You must understand, my friend, that these exhibit gentlemen are here to serve us, to show us new ideas, new and better ways of doing things—and with all due respect to the intelligence of our noble profession, I may add—to help us."

"All right, *let's go*, then," I said.

WITHOUT RESERVATIONS

Dr. Voolayvoo was right. He seemed to be an "old timer" conventionist. I, being a novitiate, placed myself implicitly under his guidance. When we stepped into the Exhibit Hall I guess I looked like a child gazing at a Christmas tree—so many things, I simply stared. I was brought back to earth by the sound of my friend's voice. "Is it not wonderful," said he, "to see so much all in one unified exhibition arranged solely for the benefit of ourselves and our colleagues?"

"It sure is," I replied. "But, how in the world are we going to see it all?"

"Listen to me, my friend," said the Doctor, "we cannot see it all in one trip around. But we could ill afford to miss any one of these exhibits. Take my advice and concentrate on one exhibit at a time. And then you must come back tomorrow and each of the remaining days. Ah, voila, right before us is the Saunders exhibit."

"Say, I've been reading the announcements of those new Saunders books. Wonder if they have them here," I said.

BOOKS BOOKS BOOKS

They surely had—it was a regular bookstore. Warbasse's "Surgical Treatment," Burton-Opitz' "Textbook of Physiology," Mock's "Industrial Medicine and Surgery," the new "Mayo Clinic Volume," Dunton's "Reconstruction Therapy," and all the others were there. I could have camped at that exhibit alone for a good half day. But just across the aisle was another attractive book exhibit which I knew I must see—that of the Lippincott Company, and I also remembered some of the other book men who, too, would doubtless have attractive exhibits.

The Lippincott books were conveniently arranged for quick reference, and included a large line of practical medical, pharmaceutical and nursery texts. A courteous representative called our special attention to Buckley's "The Basis of Psychiatry," Sharp's long-wanted volume on "Brain Injuries," and Wilson and Potter's "Internal Medicine." Also, we could not deny ourselves the privilege of studying the splendid collection of fifty hand-colored Anatomical Charts from Piersol's "Human Anatomy."

CULTURE—THE B. B. KIND

Leaving the book exhibits, we stopped to examine the exhibit of the the B. B. Culture Laboratory. "This preparation I find very useful as a biological antiseptic for both internal and external uses," said Voolayvoo. "What, you have not yet tried it? Indeed, you must leave your name and address and have a complimentary bottle sent you."

"Happy thought," said I, "but now tell me who is the tall brunette gentleman in this next booth?"

"That, my friend, is Paul B. Hoeber. You have heard of "The American Journal of Roentgenology," the "Annals of Medical History" and the "Neurological Bulletin," n'est-ce-pas? Mr. Hoeber publishes these journals and is showing them here." We stopped and besides these different journals I found some very interesting books, one of which I had been wanting for some time—Mackenzie's "Symptoms and Their Interpretations." So I ordered a copy right then and there.

EVERYTHING BUT GOAT GLANDS

"Do you employ the animal derivatives such as corpus luteum, pituitary extract, thyroids, etc., in your practice?" asked my guide and conductor as we passed on. "If so, you must not fail to see this interesting exhibit by the Hollister-Wilson Laboratories." He was right. Not until then did I realize how exacting were the requirements for producing dependable animal derivatives. I was specially interested in the set of original specimens showing the different phases of production in this field.

Proceeding farther, we stopped at the Bausch & Lomb exhibit, Space 6, where trained, scientific men were demonstrating physicians' microscopes, a new model microtome, ophthalmological apparatus and hemacytometers of B. & L. manufacture. This was an opportunity I welcomed, for I have been thinking for some time I ought to have a microscope. The B. & L. instrument appealed to me strongly.

In the next booth was the Armour exhibit—endocrine gland and organotherapeutic preparations.

"Ah, my friend, you must hear the story of how some of these products are made," said Dr. Voolayvoo. "It is really wonderful—fascinating. For one pound of their suprarenalin alone, the glands of 135,000 sheep are required." We spent a full half hour there.

A BIG SPHYG

At the Taylor Instrument Companies' Booth we saw a demonstration of their new Office Type Sphygmomanometer. This is an instrument worthy of every physician's attention. Some other very interesting instruments for home use were shown—particularly the Recording Hygrometer and Bath Thermometers in new patterns. Across the aisle we stopped to examine the new (8th) revised edition of Sajous' "Analytic Cyclopedia of Practical Medicine," shown by F. A. Davis Company. The handsome appearance of this eight-volume set appealed strongly to my guide's aesthetic sensibilities. We also got deeply interested in the new books displayed by this firm, particularly "Regional Anesthesia" by Sherwood-Dunn.

BETTER BELTS FOR BAGGY ABDOMENS

In Spaces 23 and 30 was an exhibit of Abdominal Supports which attracted our attention. This was the well known Spencer line, manufactured by Berger Brothers Company, and included abdominal belts (not corsets) for men and women, abdominal supporting corsets, sacro-iliac corsets and belts, maternity supports, etc. "You will note," said Dr. Voolayvoo, "that these supports are non-elastic and depend on correct design for comfort and efficiency." "Good idea," I thought.

Just then I noticed the Hanovia Chemical & Manufacturing Company's exhibit of the Alpine Sun Lamp and the Kromayer Lamp. I had never seen one of these in action, hence greatly appreciated the actual working demonstration by a competent representative. I found out that these lamps have a wide range of usefulness in applying quartz ultraviolet light for therapeutic purposes.

"Ah, sapristi, what clear, sharp X-ray negatives," enthused Dr. Volayvoo, as his eye fell on the Eastman Kodak Company's exhibit, "and made on films, too, which are so convenient, so easy to preserve." I readily agreed with him and before leaving, jotted down in my note book the words, "Dupli-Tized Films—Eastman."

THE X-RAY BEGINS TO PENETRATE

Very smoothly our attention switched to the neighboring exhibit, Spaces 12 and 13, for it was X-Ray machines—the new Kelley-Koett Unit and several other X-Ray specialties shown for the first time. I carried away one of their descriptive booklets. The demonstration of the K. K. Unit, together with those of Eastman negatives, had set up a powerful thinking within me.

Across the aisle was another X-Ray exhibit—The Patterson Screen Company with their Fluoroscopic and Intensifying Screens. Their screens for double screen work have been giving wonderful results, I understand. They had a new catalog on screens and their care. I was glad to get a copy.

MR. FISCHER ENTHUSES

This section seemed to be a veritable X-Ray stronghold. For the very next exhibits to catch our eye were those of the H. G. Fischer & Company and Thompson Plaster Company. I had seen a full page announcement in THE JOURNAL OF THE A. M. A. regarding the Fischer Universal Machine, and that had whetted my desire to see an actual demonstration. Here I saw it and readily understood why it is called "Universal." Mr. Fischer was quite enthusiastic over their new building, too. Said it would enable them to turn out a greater quantity of machines and give better service than ever before. The Thompson Plaster Company had several models, from their portable C up to the big Type F machine which does all kinds of X-Ray work and furnishes

practically every modality that the electrotherapeutist could desire. The idea of an X-Ray equipment all my own, was indeed growing on me. More catalogs.

"But, come, come, my friend. The time is passing," Dr. Voolayvoo reminded me. "Here is the Becton, Dickinson & Company's exhibit of thermometers, Luer syringes, Yale needles, Ace bandages and Asepto plungerless syringes. And improved, too. Oh, c'est étonnant, how progressive these people are."

WONDER THO IF IT WOULDN'T BE BETTER TO PUT THE WICKER CHAIR OVER IN THIS CORNER, AND HAVE THAT SIGN CROSSWISE, INSTEAD OF LIKE ALL THE OTHERS!

Adjacent in Spaces 16 and 17 was a veritable treat for the Eye, Ear, Nose and Throat men—the exhibit of E. B. Meyrowitz Co. Of particular interest were the Braun Snäretome, the Braun Adenotome, a non-luminous Rheostat and a pneumatic Test Type Cabinet with perfect illumination.

WE DO THE BETZ BOOTHS

Next we saw the large and complete display of the Frank S. Betz Company. Previous to that, I had a good catalog acquaintance with the Betz Co., but here were the goods themselves—instruments, apparatus, surgical merchandise, hospital furniture, electrical apparatus—and even a large line of pharmaceutical products. They told me that their line is limited only by the maximum demands of the profession. I believe it, for they seem to have everything a physician needs. Prices reasonable, too.

"See what a splendid set of electrically lighted instruments," said Dr. Voolayvoo, pointing to the Electro-Diagnostoset of the American Surgical Specialty Company across the aisle. We watched the demonstration. It is really remarkable the help one can have from these instruments in tonsillectomies and all other orificial operations or examinations. They can be used in the office, hospital or home.

In the corner space nearby, was the H. A. Metz Laboratories exhibit of Arsphenamine, Neoarsphenamine, Anesthesin, Novocain, Holocain and Pyramidon. This exhibit was of great practical value, because laboratory men were in constant attendance to demonstrate procedures for making solutions of Arsphenamine and Neoarsphenamine.

Going down the aisle, we stopped at Spaces 34, 35 and 36 to visit the Victor Exhibit of X-Ray and Electro Medical apparatus. Again I got to thinking about an equipment all my own. The high quality of materials and fine workmanship evident in the Victor apparatus impressed me very favorably. Just before leaving, Dr. Voolayvoo and myself were rewarded with a pleasant little surprise, especially prepared for Victor visitors. I also asked them to send me a catalog.

BACK, BACK TO BALTIMORE

"Ah, here is the Hynson, Westcott & Dunning exhibit," said my colleague as we started on. "We must see their products, particularly the new germicide Mercurochrome-220 soluble which seems so promising and their Benzyl Benzoate, the non-narcotic antispasmodic." Time was well spent, and I received some valuable information.

"What is this?" I asked, as I saw some steel wafer-like objects lying on a table.

"Those are detachable blades for the Bard-Parker Knife, the safety razor idea applied to the operating knife," said Dr. Voolayvoo. We stopped and the idea seemed so sensible that I ordered a set of the knives and blades, yet wondered why someone hadn't thought of it long ago.

"Do you know," asked Dr. Voolayvoo, "that the Radium Company of Colorado is now producing over one thousand milligrams of radium element per month? Here is their exhibit." The representative showed us various applicators of the latest and most approved types, and explained that the company has recently established service stations in several cities. Time well spent.

In Spaces 27 and 28 was the Squibb Exhibit. It seemed as if they were prepared to furnish any drug, chemical or biologic the physician might need. Their demonstration of the blood clotting powers of Thromboplastin impressed me in particular. "That's something I don't want to forget," said I to my companion, and asked the representative to let me have a sample and descriptive literature.

HORLICK'S THE ORIGINAL

"Ah, here are our old friends, the Horlick's Malted Milk Company," said my colleague as we approached Booths 39 and 40. This exhibit showed "Horlick's Malted Milk" in powder and tablet form; also, Horlick's Food and Horlick's Diastoid. Representatives were busy distributing literature and answering inquiries concerning the various uses of these well known products.

Just then a thought flashed into my mind, and almost convulsively I grasped at my coat pocket.

"What is it, my friend? What is it?" asked my guide somewhat excitedly. "This is it," said I, drawing forth a post card written to my wife on arrival at New Orleans, but still unmailed.

"Ah, that is easily taken care of," said Voolayvoo, "right over here is the Convention post office where your belated missive can be dispatched immediately." That done, we turned to the Oxford University Press exhibit. This had an educational featuré in its display of old and rare bibles, religious books and ancient works on medicine. But to me their most interesting and practical features were the famous "Oxford Loose-Leaf Medicine" and the "Oxford Loose-Leaf Surgery." Dozens of standard as well as new works were there, too.

"Sh—sh—", I heard in a nearby booth.

"Ah, that reminds me, we must see De Vilbiss Atomers demonstrated," said Dr. Voolayvoo. "What is an Atomer?" I asked. "An Atomer," answered my colleague, "is a De Vilbiss spray." After seeing these atomizing devices demonstrated, I could readily understand why they merit a name all their own—Atomers.

Next door to the Atomers was Blakiston's book exhibit. I liked the atmosphere and spirit of this exhibit. Their representative made me feel perfectly at home, and I found that we had quite a bit in common. Some of the new books he told me about were quite closely related to my everyday problems.

HOW HEYDEN DOES IT

"Ah, here, my friend, is something 'instructive,'" said Dr. Voolayvoo, as he noticed the Heyden Chemical display of frames showing the products entering into the manufacture of well known medicinal chemicals such as Salicylic acid, Salol, etc. We studied with great interest this part of the exhibit as well as the display of fine chemicals for medicinal and technical use.

Across the aisle was a great showing of instruments by V. Mueller & Co., for general surgery and for specialists in the different branches such as eye, ear, nose and throat; genito-urinary and obstetrics. Mr. Mueller was giving a most interesting explanation of some new instruments discovered in use abroad on a recent trip by a member of the firm.

THE A.M.A. PEOPLE CERTAINLY HAVE THINGS WELL ARRANGED HERE. BUT THIS LOCATION DOESN'T LOOK AS GOOD AS ON PAPER, AND THE SPACE IS FULLY TWO INCHES LONGER THAN I PAID FOR— I MUST SEE BRAUN.

Adjoining was another instrument exhibit—that of F. A. Hardy & Company. This was certainly an interesting spot for the Eye, Ear, Nose and Throat surgeons. Mr. Wilhelm, Mr. Frenzel and Mr. Rooney were busy indeed, but not too busy to be courteous.

In the next space we found out some new facts about Mellins Food. As we left, Dr. Voolayvoo said, "How fair and how reasonable are those Mellins people. They present the facts about their preparation and without unduly urging their side of the question, leave the physician to form his own opinion relative to the usefulness of Mellins Food in infant feeding. That is fine, fine indeed."

"But come, we have not yet examined these books in the William Wood & Company exhibit," my conductor said. This proved to be a delightful half hour, for there we found a complete line of medical and surgical books, including the latest works on Medicine, Surgery, Industrial Hygiene, Tropical Medicine, War Repair Work, etc.

Nearby was a demonstration of a little device that interested me keenly—the De Lyte Surgeon. Voolayvoo told me that its manufacturers, the Weder Mfg. Co., had exhibited each year for the last five years and that conventionists always seemed to appreciate greatly the opportunity to see this splendid little contrivance for diagnostic work.

"Do you know Mr. Maltbie?" asked Voolayvoo, as we turned about. "I think not," I answered, and he took me to the Maltbie Company exhibit. Mr. Maltbie was there extending a warm welcome to his old friends, and making lots of new ones. I became much interested in Calcreose

because it permits a very heavy creosote medication but is free from the characteristic nauseating effects. "I prescribe it wherever creosote is indicated," said my colleague.

DOWN WHERE THE WELCH'S FLOWED

"Ah, mon ami, voila," exclaimed Dr. Voolayvoo, as he looked across the aisle, "here it is at last."

I looked up, and right before us was the Welch Grape Juice Booth, with lots of Welch's on tap. "I will tell the world that that is one fine drink," said Voolayvoo, as he imbibed. "It refreshes us here in full health and strength; think how pleasing it must also be to the sick or convalescent." Grapelade, a pure grape spread, seemed to be another Welch "comer."

"Hello, what have we here?" I asked as my eye fell upon a display of baby clothing.

"That, my friend, is the Vanta line of garments for infants," said Voolayvoo. "You wonder that they are exhibited here? Do you not realize that we medical men can be of great assistance to mothers by showing them the better way to dress their babies? The Earnshaw Knitting Company have developed unique and original ideas in infant dressing that physicians should know about. With their Vanta garments, the baby is dressed from top to toe without one single pin or button, or once turning him over." Voolayvoo was right. I was glad indeed to have Mr. Earnshaw tell me he would send me a sample Vanta Abdominal Binder.

EMANATIONS OF RADIUM FACTS

Next to this booth was the Radium Chemical Company's exhibit. They were displaying new applicators, screens and other paraphernalia for therapeutic application of radium. But the most interesting thing to me was the fifteen-minute talk I had with a member of the company's technical staff. After all, radium isn't such a mysterious subject, and with the service of this company, its use by physicians is greatly simplified and facilitated.

Occupying Spaces 68, 69, 70 and 71 was the A. S. Aloe Company exhibit. With the liberal terms this firm offers, there really is no reason why any doctor should deny himself the usefulness of any desirable instrument, apparatus or piece of equipment. Aloe will furnish it on easy rental purchase plan.

In the adjoining spaces was another St. Louis exhibitor, the C. V. Mosby Company, with a complete line of medical, surgical and nursing publications. I had already seen a good many new boks, but Bartlett's "After Treatment," Hertzler's "Peritoneum," Hazen's "Syphilis," and Warfield's "Arteriosclerosis and Hypertension" were too attractive and interesting to pass up. So we did ourselves full justice by taking plenty of time for the Mosby book exhibit.

IN A TENT, BUT NO SIDE SHOW

"Suppose we step out and smoke a bit," I suggested at this point. "Bonne idée," agreed my guide. Coming back toward the building, we noticed a tent pitched on the lawn. In it was the exhibit of the Abbott Laboratories. We were glad indeed to visit this exhibit. They were showing motion pictures every hour, demonstrating the clinical uses of their Dichloramine-T, Cholazene-Parresine, the wax dressing for burns, and Parresined Lace Mesh Dressing. After an hour here we stepped back into the exhibit building.

BOONS FOR BABIES

Entering by a different door, we saw the exhibit of the Dry Milk Company in Space 76. "Do you know," said Dr. Voolayvoo, "that dry milk has become quite a factor in the feeding of infants and invalids?" We stopped, examined the preparation and received some very interesting information. A striking demonstration was that showing the curd of dry milk in comparison with that of liquid milk. Sterling Brand Milk Sugar was also on display here.

"And right here," said Voolayvoo, "is Dennos Food, the whole wheat milk modifier. It has been on the market for about fifteen years now, and has won a well merited place in infant feeding. You must see this exhibit." The Dennos booth was modest in its decorations, but Dr. Voolayvoo and I both carried away a neat souvenir gift as we left, and a good impression of the "whole wheat milk modifier."

Turning the corner, we noticed in space number 77 an interesting display of Radium Applicators and Radium Needles by the W. L. Cummings Chemical Company. Special features here were the new and approved radium applicators for treatment of uterine and bladder conditions.

Adjoining this booth was an exhibit of the Dr. Beachler Standard Sphygmomanometer by the Reliable and Efficient Mfg. Co. This is a mercurial instrument and is so simple, so easy to operate, and is so convenient that I ordered one. It is small and compact enough to carry in one's pocket or bag.

WHERE DOCTORS MEET DOCTORS

"By the way, are you familiar with the Calco pharmaceutical products?" asked Voolayvoo. "This company has been very well received by the profession." Drs. F. Elbert Davis, B. A. Oliver and J. H. Seibert were in charge, and we listened with interest to the facts they presented about Cinchophen, Albutannin, Acetannin, Chloramine, Dichloramine-T, and other Calco products.

Halting me at the Marshalltown Laboratories booth, Dr. Voolayvoo exclaimed, "Ah, here is something fine—a transparent, flexible, waterproof tissue that will not adhere to a wound." I took down the name "Cellosilk" and noted, too, that it comes in an impervious form, and in a perforated form for dressing wounds requiring air and drainage.

FIRST AID FOR THE NEO-NATI

"Say, here is something we must not pass up," said I as I glimpsed a Lungmotor demonstration. We stayed here for some time, and I found out, somewhat to my surprise, that over 6,000 Lungmotors are now in service in hospitals, municipalities, and industrial plants. "Voila la petite," exclaimed Voolayvoo, pointing to the New-Born Infant Lungmotor. "That is a device that every obstetrician should have as a necessary part of his equipment," he added. I remembered a bad case of asphyxia-neonatorum that I had recently had, and lest I should forget, took with me a descriptive circular.

Next, we stopped at the booth of the Foregger Company, and saw a demonstration of the No. 66 "Gwathmey" anesthesia outfit. They were showing some of the very latest developments in anesthesia appliances and our time here was well spent.

Over at the Buzzell-Flanders Company booth, we found out some new things about sutures and ligatures. For years this firm has prepared all of Dr. Henry O. Marcy's Kangaroo Tendon under his direct supervision, and I was glad indeed to see this tendon and have its advantages told me. They are also headquarters for surgeons' needles and hypodermic needles. I'm going to keep them in mind.

THE X-RAY IDEA PENETRATES DEEPER

At the Southworth Company's exhibit, my mind again reverted to the thought of an X-Ray machine all my own, for here were some authoritative and practical books on roentgenology, "X-Ray Examination of the Alimentary Tract," by Dr. James T. Case; and "X-Ray Examination of the Chest for Pulmonary Tuberculosis," by Dr. Kennon Dunham. A number of other helpful and instructive books were displayed, among them being "Pediatrics" by Dunn, and "Rational Therapy" by Lerch.

MEETING THE SOUTHERN EXHIBITORS

"Now let us step in here and see a real New Orleans Exhibit," said Voolayvoo. He pointed out the booth of the McDermott Surgical Instrument Co. Being at home, this firm was able to have one of the most complete exhibits at the meeting. There were surgical instruments, the most modern makes of operating tables, hospital furniture and also specialties such as the Cave-McDermott Ether Outfits, Lynch Suspension Outfits and Matas Jaw Splints. A full force of representatives were on hand, and with characteristic Southern courtesy and hospitality took great pains to see that we got the most out of their exhibit.

Down the aisle, in Booth 107, we came across another interesting exhibit of surgical instruments. This was by Lawrence Everhart of Atlanta, Ga. His Pacquelin Cautery and American made Killman Dilator seemed to be very popu-

lar, and well they might be, for he was selling them at the popular price of $35.00 each.

"I take it that you are interested in matters pertaining to hospital work, yes? Then we must step back here to Space 86 and talk with Mr. Crain of 'Hospital Management,'" said my guide. The suggestion was good, and we found the Crain Publishing Company were performing a real service to Conventionists by showing them how to keep better posted on hospital matters. I was presented with a copy of the April issue of "Hospital Management," and found it so good that I subscribed for a year before leaving.

TO KEEP AMERICANS DRY

"Sapristi, what is the gentleman doing?" exclaimed my friend Voolayvoo, pointing to the booth of the Waterproof Fabric Company. We stopped and watched. Here was a pan of water boiling. Sagging into it was a piece of thin, white fabric. The gentleman struck a match, laid it burning on the fabric, and much to our surprise, it continued to burn quite undisturbed by the boiling water beneath. The fabric is called Sani-Dri, and I found out that surgeons' aprons made of it are available.

YES, DOCTOR, (HOLY SMOKES WHAT A CROWD) THIS IS OUR LATEST MODEL)-(I DIDN'T THINK THEY'D SWAMP ME LIKE THIS)-JUST LEAVE YOUR NAME AND I'LL SEND IT-(BELIEVE ME I'M GOING TO WIRE GEORGE TO COME AND HELP ME TO-MORROW!)

Adjoining this booth was the Pulvola Chemical Company's exhibit. This was very attractive and the unique demonstrations were commanding the interest and attention of many of my colleagues. No wonder, the way those medicated powder ointments resist moisture was indeed convincing. Before leaving, I jotted down in my note book "Dolomol Dry Dressing" and "Pulvola Powder."

Just at the doorway to the next room, we found the exhibit of D. Appleton & Company. They were showing the new medical books of this season and last year as well as new revisions of many of the standard editions now famous throughout the world. A novel and interesting feature of their display was an historical exhibit presenting manuscripts, rare first editions, autographed letters, etc. Really, it does one good to get into the spirit of these great publishing houses by learning something of their history.

THAT LOOSE-LEAF IDEA AGAIN

"Ah, here is the Nelson Loose-Leaf Medicine," said my guide, as we stepped into the next room, "a complete system of Living Medicine by Leading Medical Authorities of the world." A representative showed us in a very interesting way the service this system gives the doctor, and how it is kept continually up-to-date by the loose leaf device, and supplemented by abstracts, special articles and by the services of the Research Bureau. I liked it very much.

In the next booth, Space Number 98, the Takamine Laboratory representatives were exhibiting Arsaminol and Neoarsaminol. I was greatly impressed with the great care taken in testing these products. According to regulations, they are tested at the Takamine Laboratories and by the U. S. Public Health Service, and "to make assurance doubly sure", each lot is tested clinically by a recognized authority.

In the next booth were "Anatomik" shoes, displayed in a number of different styles. There were specialties particularly suited to the requirements of the Southern trade. The manufacturers have been very successful in producing "attractive" footwear for prevention and relief of foot troubles. "They have, as it were, sugar coated the pill of wearing orthopedic footwear," commented Dr. Voolayvoo, as we turned to the exhibit of E. Leitz, Inc. Here was a variety of fine apparatus now of Leitz manufacture, but formerly imported. Voolayvoo called my attention especially to the new "Elei" Colorimeter, a modified Duboscq.

THE BOOTH BLANCHE

"Ah, how beautiful, how appropriate," exclaimed Dr. Voolayvoo, as he noticed the Mead Johnson & Company booth—all pure white, decorations, tables, chairs and everything. It seemed particularly fit as a setting for the display of their infant diet materials, which are now so well known by members of the profession. I'm glad I visited the 'white booth.'

"Now," said my guide, "we have not much more time." It was true. For in addition to the exhibits already mentioned we had tarried at the booths of the Boehm Surgical Instrument Co.; had looked over the X-Ray supplies of the George W. Brady Co.; had seen a demonstration of one of the Campbell X-Ray Units; had examined the tissue dressings and bandages of the Dennison Mfg. Co.; had talked with a General Electric representative about their new X-Ray tube; had seen the Jaeckh Mfg. Co. compressed air cabinets and the Sanborn Blood Pressure Outfits demonstrated; had purchased some iridio-platinum needles from Mr. Wilson of Wilson & Wilson; had looked over the Practical Medical Series of the Year Book Publishers; and had carefully studied the anatomy and physiology of a Sealy mattress. And every exhibit had netted us some new ideas.

"Yes it has been one big day," said Voolayvoo, "but we must see the Sorensen Exhibit here in Spaces 102-103." Representatives were showing the different models of Sorensen Tankless Air Compressors. "Are they not a great improvement and convenience?" asked my friend. "Indeed so," I replied and asked the representative to send me literature. Another interesting feature here was a Specialist's chair, this being its first appearance on the market.

MEASURED ANESTHESIA—WHY NOT?

"Here, too, my friend, you must see the famous Connell Gas Oxygen Apparatus—the machine with the meters," said Voolayvoo, pointing to the Scientific Apparatus Company booth. "Meters," I said, "good idea, charge 'em so much per thousand."

"Ah, no, my friend, you are facetious," rejoined Dr. Voolayvoo, "and this is a serious matter. We measure with great exactitude our dosages of liquids, solids or powders—why not of Nitrous Oxide, Oxygen or Ether?" After seeing the machine demonstrated and noting the ease with which one may keep tab on the amount of gas being delivered, I felt like apologizing to my good colleague for my facetious remark. He was looking at his watch.

THOROLY CONVINCED BY "THORO"

"Just one thing before we go," he said, "over here is a treat I have reserved for you until the last." He led me to the exhibit of the Thoro Corporation. I understood. This was Thoro—the new, hygienic skin cleanser that I knew so many physicians, dentists and other particular people are now using. "See the handsome white enamel holder, and here is the powder itself," said Voolayvoo, "so pure and cleanly." In the adjoining washroom I had my first "Thoro" washup, but not my last, I assure you. For on the way out, I ordered two Thoro Holders, and a supply of Thoro Powder for my office and home.

The End of a Perfect Day.

We started toward the elevator. A great crowd was there. I heard the bell ringing at regular intervals, buzz—buzz—buzz, it continued on and on. I thought it strange to ring an elevator bell like that, I became confused. Someone punched me in the ribs—then another punch—and all the time that confounded bell buzzing—I felt strange—"Voolayvoo, Voolayvoo, where are you," I called—another unmerciful punch in the ribs and I jumped violently.

"—— for heaven's sake," a familiar feminine voice was saying, "why don't you go down and answer that midnight call? That phone's been ringing for the last five minutes."

"Yes, my dear," I answered, composing my variegated emotions as best I could, "it's surely 'fierce' to be called out like this, but after all, being a doctor has some compensations, at least."

The above *dream* is guaranteed to be correct in its details, if advance information regarding the New Orleans exhibits is to be depended on. Not all firms were able to supply such information, but it can be taken for granted that every exhibit will be worthy of the conventionist's close and careful study.

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